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VETERINARY REVIEW.

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AMERICAN VETERINARY REVIEW.

JULY, 1905.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, May 15, 1905.

TICKS SURELY TRANSMITTORS OF PIROPLASMOSES.—I am in hope that what I wrote on the etiology of Texas fever in my last chronicle, and on the biology of the causal transmittor, have not been misunderstood, as advanced to upset the tick theory and to substantiate the objections presented by Mr. Megnin. The subject did appear to me interesting, and as a chronicler I ventured to use it for my purpose, reserving to myself the right to call the attention of my readers to anything that might come under my notice in relation to the subject. My chronicle for June was scarcely mailed when the *Archiva Veterinara*, of Bucharest, comes to me with an article from Prof. C. S. Motas on the subject, and which relates to *experimental transmission of bovine piroplasmoses by ticks.*

To begin, Prof. Motas gives credit to the experiments made first of all in America by Smith, Kilborne and others, and then by Pound in Australia, Koch in Africa, Lignierés in Argentine, and which demonstrated the undoubted part played by ticks in the etiology of the disease, and proved also that the larvæ are capable of transmitting the infection.

Later on, said Motas, Weber, Kossel, Schultz and Miesner demonstrated also that unsexually mature nymphæ were also capable of infecting bovines. Therefore, it is to-day admitted by all and all over the world that ticks under their various stages of evolution are the means of transmitting bovine piroplasmose.

Prof. Motas then remarks that in Roumania the disease is also propagated by ticks, and his experiments prove it. The bovine piroplasmose of Roumania is absolutely identical to that of other countries, to the point of view of the parasite as well as to that of the clinical aspect of the disease. The ticks that are intermediate belong to the gender *Rhipicephalus annulatus*. The experiments were carried on three animals, two belonging to the grey breed, the third a Schwitz cow.

Larvæ were obtained from female adult ticks, taken from diseased animals, in various parts of the country. 50 were placed on the Schwitz cow, between 250 and 300 on the others. The experiment was made in summer; the blood of the animals had been examined several days before the experiment. The result was the same on the three animals. The disease appeared between 12 and 14 days after the infection by the larvæ, and then hæmatozoa could be found in the blood, although they were then rare. The animals recovered quickly. The *Rhipicephalus annulatus* goes through all its stages of development on the same animal. The first stage of the larvæ takes place in four days; in these conditions it is not very probable that the larvæ would be able to produce the infection, and as long as hæmatozoa cannot be found in the blood unless after 12 or 14 days. The experiments made by Prof. Motas on sheep, those of Loungsbury on dogs, in the piroplasmoses of those animals demonstrate obviously that sexually matured ticks only are able to produce infection. It is then natural that the same condition occurs in bovine piroplasmose.

* * *

Dog Distemper.—For some time back I have been writing much on dog distemper and the prevention of that troublesome scourge of one of the most interesting among our domestic animals. In fact, several of my colleagues in journalism have done the same. The question which occupies their attention is that of prophylaxy by the vaccination of Dr. Physalix. For one among others I recorded the trials through which the vaccine had passed—first the experiments made at the suggestion of

the Société de Médecine Vétérinaire Pratique, which ended by the sudden withdrawing of the interested party; then came the report of a prospective extensive test in England, followed after a long time by the report of Prof. McFadyean, a majority report which was unfavorable, and finally the minority appeal, which, without endorsing the prophylactic test, did not reject it, and recommended other experiments.

It is certain that under such circumstances, those who are looking for news will feel rather tired of seeing so much said and written and so little accomplished. But unfortunately the question, I fear, is not yet near solution. It is true the gentlemen who first worked on distemper, Ligniéres and Physalix, are men of high authority, and the advance that they have made of their discovery of the germ cause of the disease is one that cannot be ignored. And yet others disbelieved them. And as long as this state of affairs exists, the question of the preparation of a true vaccine remains doubtful!

* * *

Prof. Carré, the worthy assistant of Prof. Vallée, has lately given the publication of some researches which he has made on dog distemper, and which are likely to give a new direction to what has been done already.

I may be here allowed to resume the communication of Prof. Carré as he made it to the Société Centrale.

The reading of the numerous works relating to the etiology of dog distemper, the negative or unsatisfactory results of the inoculation of the various microbes described as specific agents of the disease, the comparisons of some of the lesions of this affection with those that are sometimes observed during diseases produced by ultra-microscopical microbes passing through filters, all these have decided Mr. Carré to take back again the bacteriological study of dog distemper.

At the beginning of the disease, the nasal discharge is often virulent, sometimes very much so; inoculated in doses of two drops to a young dog, it kills him in five or six days without lesions at the point of inoculation.

Filtration through a very porous filter of discharge diluted in sterilized water, gives a liquid which, inoculated in several media, fails to cultivate, and yet if inoculated to young dogs this liquid gives rise to the development of very interesting manifestations.

After four days the temperature rises; rapidly it reaches 40° and 40.5° and remains high for two or three days. Soon the animal has coryza, more or less severe, the eyes are running tears and pus. Inflammation spreads more or less rapidly to the dog's respiratory organs. Finally after six to ten days, handsome pustules appear on the abdomen, in the groins, the thighs, the axillæ. The discharge, first serous, becomes sero-purulent and muco-purulent. The animal looses flesh rapidly and dies with broncho-pneumonia.

* * *

This experiment has been repeated several times and always with the same results. According to the age and the breed of the dog and probably, also, according to the quantity of the virus inoculated, the progress of the disease is more or less rapid and severe and the reaction more or less active.

The rising of the temperature is never missing; the coryza and the eruption of the pustules are frequently observed; the fatal termination is exceptional.

If at the time of the elevation of temperature blood is taken from the animal infected with the filtrated fluid and this blood defibrinated is injected into a healthy animal, the same symptoms will be observed, viz.: elevation of temperature, coryza, pustules. But this same blood sown in various media fails to give any culture.

The conclusions of those experiments made with the greatest care by Prof. Carré, justify him in classifying the virus of dog distemper among the filtering microbes. [So far among the invisibles and as yet undiscovered.] These conclusions have since been confirmed by another biologist, Mr. F. J. Bose, who says that "the viruses which pass through filters are minimal forms of protozoa, and by its symptomatology and the charac-

ters of its lesions, distemper must be placed among the bryocytic diseases, protozoar diseases, with acute evolution, alongside variola, aphthous fever and rabies.

* * *

A NEW GENERAL ANÆSTHETIC.—While the use of general anæsthesia is not as extensive in veterinary as in human surgery, it is certain that in our day, ether and chloroform are more frequently resorted to than some years ago, and it is probable that general anæsthesia would be used still more generally if great improvements were applied in the technique of the administration of the preparations which produce it; in other words, if a method of general anæsthesia, less difficult to obtain, less dangerous and as sure of success, was found.

Rachicocainization was recently tried in human medicine, and at first seemed to realize the desired object. But some failures of importance soon set it aside. I do not know of its having been tried in veterinary medicine.

In a journal of therapeutics I find, however, the announcement of a new preparation, which, if all that is said of it is true, will replace with advantage old ether and chloroform. *Scopolamine* is of German discovery and was used as an anæsthetic in 1900 in Germany.

With it, it is claimed, no more alarming preparations, no more anxiety about respiratory or cardiac troubles. Three injections of one milligramme of scopolamine and of one centigramme of its antidote, *morphine*, are made in succession four, two, and one hour before the operation. An irresistible, very calm sleep follows which resembles in every point natural sound sleep. The patient may be awakened by shaking him, by loud talking to him, but the anælgesy is complete and remains such, even a long time after awakening.

* * *

Evidently all those qualities are very tempting, and surgeons of both branches of medicine will no doubt set to work to try it.

In Germany, where nearly 1500 injections have already

been done, there are some advocates which, while acknowledging the advantages, point out also its inconveniences.

First of all, it seems that scopolamine alters very rapidly at the contact of air and light; it must be thoroughly pure and recently prepared. There are individual cases where its mode of action has shown itself variable, and on that account studies are required to establish the correct dose to use. In some cases, again, it has been necessary to assist the complete anæsthesia by the use of a few inhalations of chloroform.

Unfortunately the use of scopolamine has not been without serious danger, as 12 cases of death have been recorded: if such prove frequent, it is certain that the old methods will have to be considered as the best, even with their objections.

* * *

PROFESSIONAL ADVERTISING.—In that little sheet, known as the *Veterinary News*, which, only in its second year of life, yet seems to have accepted for motto of its publication, "better and better," I find a leading article on the "Gentle Art of Advertising," where with much spirit the rules of the Royal College of Veterinary Surgeons in relation to advertising are the object of mild criticism. Indeed, the article says: "The by-laws of the R. C. of V. S. contain some alarming restrictions as to advertising, strung together in a loose manner, and are applied at the sweet will of the powers that be, or rather put in force on occasions when it is thought safe to do so"—and so on does the article continue in showing the restrictions as scarecrows, that only "the poor trembling creature who has been hauled up before the august tribunal for advertising his penny-worth of physic has bowed down before the bogey and promised to be a good boy and not do it again;" and, again, that "summonses to answer are only sent to those offenders who, from ignorance or timidity, are likely to obey." Consequently I may infer that those who are not ignorant or timid continue to advertise, notwithstanding the regulations.

Then the writer tells how things are done in France, where "veterinarians are scientific and are recognized by the

Republic." There they advertise freely. For instance:

(1) Percheron Horses and Mares.—M. * * *, veterinary surgeon, Chevalier of the Order of Agricultural Merit, Saint Calais (Sarthe), will purchase direct from the breeder Percheron horses and mares for all purposes. Description and photographs sent on application.

(2) M. * * *, veterinary surgeon of Lusignan (Vienne), breeder of donkeys for mule breeding purposes, will purchase on commission male and female donkeys for all purposes, milch donkeys and mules.

(3) Breton Cows. Morbihan and Finistere cows and bulls, heifers and steers. Genuine Bretons. Special terms to veterinary surgeons and purchasers introduced by them. Stock warranted, payment on delivery. * * *, veterinary surgeon and professor, Agricultural School, Hennebont, Morbihan.

(4) Wether Ewes and Rams. M. * * *, veterinary surgeon, Chateau Roux (Indre), offers his services to his confrères to purchase pure-bred stud sheep.

(5) Sporting dogs, pointers, setters, laveracks and cockers, well-bred, and by well-known sires, for sale. Address M. * * *, veterinary surgeon, Saint Leonard (Haute Vienne).

(6) Do you require natural and pure Chablis? If so, apply to M. * * *, veterinary surgeon and wine grower, Chablis, Yonne.

(7) Olive Oil. M. * * *, veterinary surgeon and olive garden proprietor, Draguignan (Var), will send free to railway station, olive oil, warranted pure, at 1 franc 90 the litre. Samples sent free on application.

(8) Coffee and Rum. M. * * *, Government veterinary surgeon, Saint Denis (Island of Réunion), offers to his confrères Réunion coffee and rum at moderate prices.

All these are correct. The conclusions are evident. Advertising exists more or less in France and also in England, perhaps also in other countries. But if my memory is not wrong and unless things are changed very much, advertising as it is considered here, from a professional man, is not admitted in America, which is the country of advertising; or, if it is done by some, you can be sure that he will soon have to account for it or stop all connection with the profession and its representative, the National Association. It is certainly to be regretted

that members of an honorable profession should take advantage of their scientific title, of their honorary or governmental situation, to ask patronage. I believe that those who do join trade to their profession have a right to do it; that they can sell horses, mares, donkeys, mules, cows, ewes and rams, dogs or even wine, oil, coffee and rum, but I hold that in due respect to their profession they have no right to advertise their professional capacity. There is certainly in the laws of professional deontology an important point which in Europe remains to be reconsidered.

* * *

"MANUALE DI ANATOMIA DESCRITTIVA COMPARATA DEGLI ANIMALI DOMESTICI" is the title of a little work on the comparative descriptive anatomy of the domestic animals, which was sent to me by the author, Doctor Teresio Mongiardino, Professor of that branch at the Royal Superior Veterinary School of Turin. This is the first volume only. It gives first in an introduction a general and concise review of embryology and then enters into the consideration of the whole work. In the first part, the apparatus of locomotion, osteology, arthrology, and myology occupy the greatest part of the book. In the second part splanchnology presents to the reader the apparatus of digestion and its annexes. The entire subject is illustrated with 210 plates, many of which are original.

Taking in consideration that probably *the* work of veterinary anatomy all over the world is Chauveau, and that it is found in all French and English speaking countries, and therefore probably also in Italian veterinary schools, it may seem that there is no necessity for such a manual as that of Dr. Mongiardino. That is a question of appreciation. But knowing as I do how students appreciate *résumé*, manual and vade mecum, and knowing also the good such little books do, when they are well written and correct, I must say that the "Manuale di Anatomia descrittiva" is one which I believe will render great services to the students of veterinary medicine, those of agricultural schools and also practitioners.

"DISEASES OF CATTLE."—As I entered the hall where the Société Centrale de Médecine Vétérinaire was to hold one of its last meetings, I noticed several members gathered together and looking with exclamations over a work which had been sent by one of the foreign corresponding members, my friend, Dr. D. E. Salmon. The book was the revised edition of "Diseases of Cattle," published by the Department of Agriculture. I cannot say how the whole work was praised, but only repeat what has already been told so often by those who notice those books here: "When will we have such publications?" That says much about the revised American work.

To conclude my acknowledgments of the receipt of American works, I will mention the excellent report on health of animals in Canada by Dr. J. G. Rutherford, Veterinary Director General, and the annual report of Dr. L. Van Es, State Veterinarian of North Dakota. A. L.

THE PRACTICAL VALUE OF MALLEIN.

The REVIEW is beginning to feel satisfied with its efforts to precipitate a "row" among the members of the veterinary profession over the much mooted question as to the reliability of the glanderous serum for the various purposes for which it is employed in connection with that most insidious, loathsome, and peristent bane of our principal patient, glanders-farcy of the horse: as a diagnostic, prophylactic and curative. The striking absence of unity in professional judgment upon these points, as expressed by veterinarians through the journals, in theses presented at meetings of medical associations, and in debate, is a standing menace to our scientific progress. We are certain that it is possible to arrive at more definite conclusions concerning the value of the serum for these purposes if the men who mould professional sentiment will but take the question up in an intelligent manner, and pursue it until its irregularities are smoothed out, exaggerated claims modified, irrational condemnations displaced, and its merits and demerits made to stand boldly out by indisputable evidence and

records. One of the REVIEW'S most versatile and gifted collaborators, Dr. Schwarzkopf, in the present number, strikes a good many large nails squarely upon their heads in his reply to an article republished in a recent number of this journal from our Western contemporary. His plea for rationality in the use of mallein is characteristic and commendable. He lays particular stress upon "the man behind the syringe," claiming that he must pursue his investigations in a scientific manner, must have education, discernment, and discretion to give him the power to make reliable deductions. Medicine is an inexact science, and there are modifying circumstances in each individual case where the serum may be used; in the rôle of a diagnostic, for instance, what might be regarded as confirmative symptoms in one individual would not be considered as such in another. This, then, is where the scientific veterinarian may utilize his greater attainments and demonstrate his superiority over persons lacking such qualifications.

Without here entering into a discussion of the many-sidedness of the question, we jump to the object of these remarks, which is to impress REVIEW readers with our conviction that it is only through a liberal interchange of opinions among those who have had large experience and who have been ardent students of the investigations of the veterinary authorities of all lands, that we may hope to attain a rational guide to the exact truth. We have no other desire than to serve the profession as a means to that end, and to accomplish that object we reiterate our invitation to the profession to make this journal the medium through which the present chaotic state of the subject may receive the brightening influence of intelligent discussion.

CONNECTICUT IN LINE.

After a most persistent and stubborn fight by the Connecticut Veterinary Medical Association, a bill regulating the practice of veterinary medicine has passed both houses of the Connecticut Legislature, received the signature of the Governor, and thus become a statute law. The bill, while not all that was

asked for, nor entirely satisfactory to the profession, yet, in view of the great opposition which had to be overcome, it is a great victory for our colleagues in the Nutmeg State, and we heartily congratulate them. It is expected that the *personnel* of the Board of Examiners will be known in a few days, and the REVIEW will in the August number publish the text of the bill and the names of the veterinarians appointed to carry out its provisions.

ERRATUM.—In last month's REVIEW the statement was made on page 246, that the dates of the coming meeting of the American Veterinary Medical Association at Cleveland are August 18 to 21, which of course is an error. While we have no doubt that no one will be misled by this misstatement, since the date has been and is being constantly advertised through this journal and otherwise, we wish to impress every reader with the correct days—Tuesday, Wednesday, Thursday and Friday, August 15, 16, 17 and 18—that no one may suffer disappointment.

APROPOS of the discussion recently indulged in through the REVIEW as to the advisability of the veterinarian forming closer relationship with the stockman and agriculturist, the paper by Prof. Charles E. Marshall, of Michigan, which was read at the last annual meeting of the Michigan State Veterinary Medical Association, at Lansing, and published elsewhere in this number, is a valuable contribution to the subject, and we commend it to our readers.

AN ORIGINAL CONTRIBUTION TO THE REVIEW, entitled "The Medical Man and Who He Is: A plea as to whether the man that practices veterinary medicine is a medical man and physician, or does the term belong exclusively to the man that practices human medicine." By Ernest I. Smith, D. V. M., Cornell University, Cherry Creek, N. Y., will appear in the August number.

ORIGINAL ARTICLES.

RUPTURE OF THE PREPUBIAN TENDON IN THE PREGNANT MARE.

By W. L. Williams, Professor of Surgery in the New York State Veterinary College, Ithaca, N. Y.

Writers on veterinary surgery and obstetrics generally include rupture of the prepubian tendon among the ventral herniæ without directing special attention to this characteristic and very serious lesion.

Because of its surgical importance as well as its essential difference from other ruptures in its etiology, symptoms and morbid anatomy we venture to describe it separately, hoping thereby to direct to it the attention which we feel it deserves.

The lesion consists of a transverse rupture of the prepubian tendon immediately in front of the pubis, between the two abdominal rings, both of which are involved and, when the rupture becomes complete, obliterated, all tissues between the two openings being torn asunder.

The accident is practically confined to the mare; we have seen one instance in the cow, and have found no record of its occurrence in other animals.

So far as known the rupture takes place only in advanced pregnancy, rarely prior to the close of the tenth, usually during, or after the completion of the eleventh month.

The causes so far as determined are:

1. The increased strain upon the abdominal floor from the presence of the gravid uterus, which represents at the close of pregnancy probably 30 to 40 per cent. of the total weight of the abdominal contents.

2. Degenerative changes in the tissues of the abdominal floor, including the prepubian tendon, and closely associated with, or expressed externally by, profuse œdema of this region.

3. Very rarely, the author having known but one case, unaccompanied by œdema, there is a definite history of violence,

consisting in this one instance of the mare becoming mired in deep mud with her hind-feet, and over-exerting herself in gaining the bank of the stream, thus pulling the hind limbs forcibly backwards, and with them the pelvis, causing its chief anterior stay, the prepubian tendon, to give way.

Almost always there can be no reasonable presumption of accident, the rupture being what we may rather designate as spontaneous and is usually comparatively gradual, frequently being preceded for days by premonitory warnings.

It may be more common in draft mares than in those of lighter breed, but our experience having been largely with the former class the grounds for comparison are not conclusive. We have observed the lesion more frequently in idle mares which were well fed, and have not seen it in badly nourished animals.

The first symptom usually noticed is an extensive œdema beginning just in front of the mammary gland and extending thence forwards and backwards until it reaches from anterior pectoral region to the perineum covering the entire floor of the body for a depth of 2 to 4 inches. The œdema presents the usual clinical characters except it is possibly somewhat firmer than generally seen and somewhat more painful to the touch.

The exact relationship of the œdema to the rupture of the tendon is undetermined, our observations leading us to believe that it is an expression of serious degenerative changes which are taking place in the deeper parts. The œdema, probably affects the tendon itself at the same time and diminishes the resisting powers by forcing the fibres apart as well as weakening them directly.

The movements of the patient soon become restricted to such locomotion as is essential and this is marked by care and deliberation. The restriction of movement may be partly due to the mechanical impediment of the œdema but it appears rather to result from pain and a premonition of injury were rapid motion attempted.

This restriction of motion precedes the rupture of the tendon and is increased as the rupture proceeds.

Should the tendon remain intact until relieved of its great load through parturition the œdema quickly disappears and the parts become normal, but in many cases the tendon gives way before the foal is born and the mare succumbs, or recovering, is ruined in value and the foal generally perishes.

As the tendon begins to part between the two abdominal rings characteristic symptoms arise which serve to distinguish this from all other lesions, not alone as a rupture, but differentiating it from all other ruptures by the displacement of parts

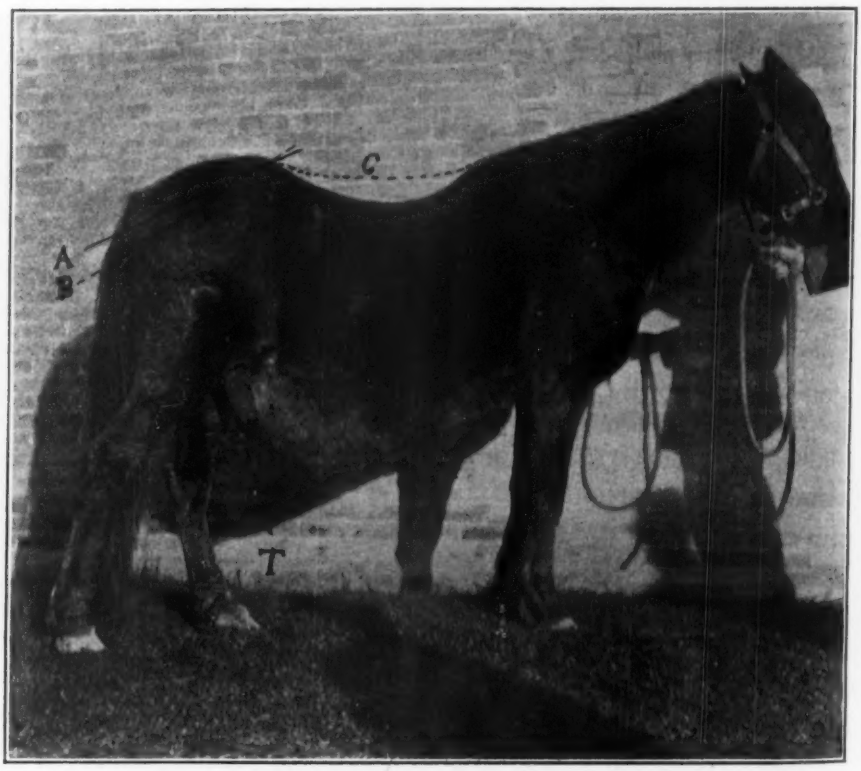

FIG. 1.—RUPTURED PREPUBIAN TENDON, "RECOVERED" CASE.

A. Line drawn through the ilial and ischial tuberosities. B Estimated position of line prior to rupture of the prepubian tendon. C. Estimated normal line of the back. T. Teat displaced downwards and forwards

or organs. The spinal column of the horse forms an arch from the first dorsal vertebra to the sacrum which is chiefly maintained by the linea alba, ending on the pubis in the prepubian tendon behind and on the sternal cartilage in front, thus acting as a powerful tie. If the prepubian tendon parts at the abdominal rings, the arch of the spine can be no longer maintained

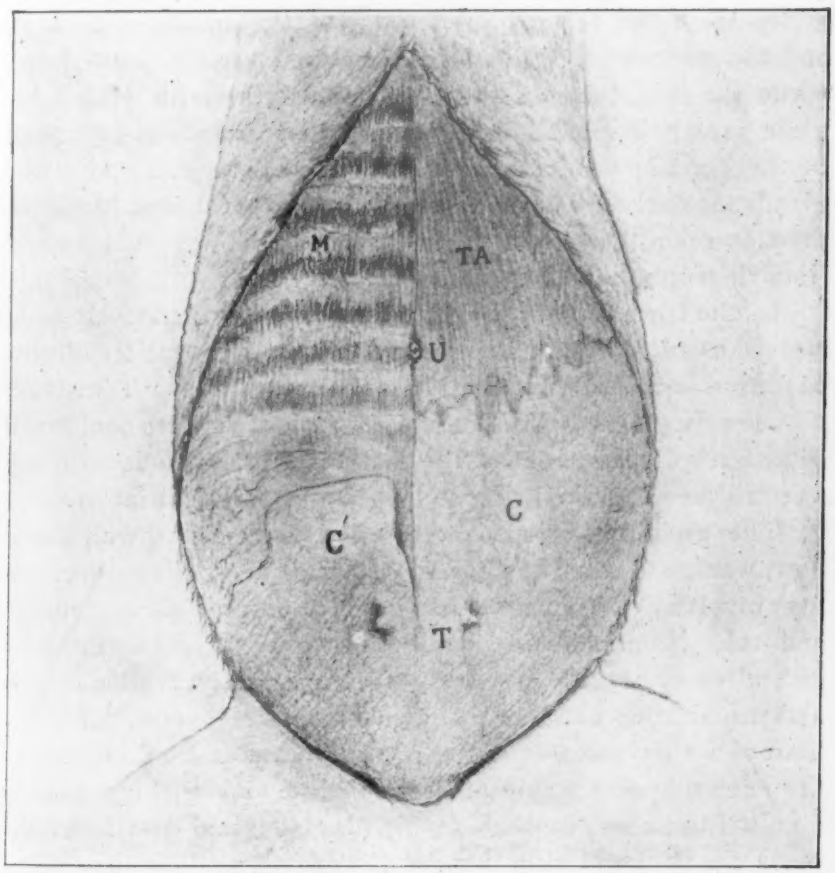

FIG. 2.—DISSECTION OF THE ABDOMINAL FLOOR OF FIG. 1, THE SKIN AND SKIN MUSCLE HAVING BEEN REMOVED.

TA. Tunica abdominalis extending barely half way from the sternum towards the pubis, having parted with the tendon and become displaced forwards. M. Straight muscle of the abdomen after the removal of the abdominal tunic. C. New formed connective tissue serving to reënforce the weakened abdominal walls where the abdominal tunic and rectus muscles are wanting. C'. Ditto, the anterior portions of which have been partly cut away, affording some suggestion of thickness. U. Umbilicus displaced forwards approximately one-half the distance from its normal position to the sternal cartilage. T. Teats displaced forwards.

and the back drops downwards, as is shown at C in Fig. 1, producing lordosis or "sway back," while the pubis becomes displaced backwards, causing the external ilial tuberosity to descend and the ischial tuberosity to become displaced upwards, decreasing the normal slant of the hip which we have estimated in Fig. 1 as B to the abnormal slant as found at A.

The rupture occurring between the abdominal rings, obliterates these and relaxes the fixation of the mammæ in them, and the abdominal tunic being ruptured on the same level, while the skin becomes greatly stretched, the milk glands become greatly displaced downwards and forwards as indicated by the position of the teat at T in Figs. 1, 2 and 3, and the glands themselves become less conspicuous because of the compression upon them from the stretching of their capsule derived from the ruptured abdominal tunic.

In the illustration the displacement is comparatively mild and is usually greater, somewhat like the illustration of this condition as copied from St. Cyr by Fleming in his "Text-Book of Veterinary Obstetrics." No other form of rupture could well cause such displacement of the mammary gland, as it is firmly fixed to the abdominal ring so long as that remains intact.

The umbilicus is also necessarily displaced forwards and downwards as shown at U in Figs. 2 and 3. The rupture having involved the entire diameter of the prepubian tendon, and the abdominal tunic having given way, the rupture may extend on either side outwardly from the external side of the abdominal ring until it includes the entire abdominal floor. Through this great rent the gravid uterus and other viscera drop down upon the skin and skin muscle and pushing the abdominal tunic and musculo-tendinous abdominal floor forwards, bears the skin and skin muscle downwards until it may reach the hocks or even lower. Early in the progress of the lesion firm upward pressure in the premammary region with the hand, discloses a tense hernial touch without a distinct boundary; as the rupture progresses the hernial touch becomes more pronounced.

The downward displacement of the abdominal viscera with the backward displacement of the pubis, causes the flanks to sink in and greatly reduces the transverse diameter of the body at this point.

The skin and skin muscle tend by their elasticity to check or stop the progress of the rupture, in which they are aided somewhat by the resistance of the uterine ligaments and the mesentery, which support much of the visceral weight when the organs have become displaced downwards. In some cases in

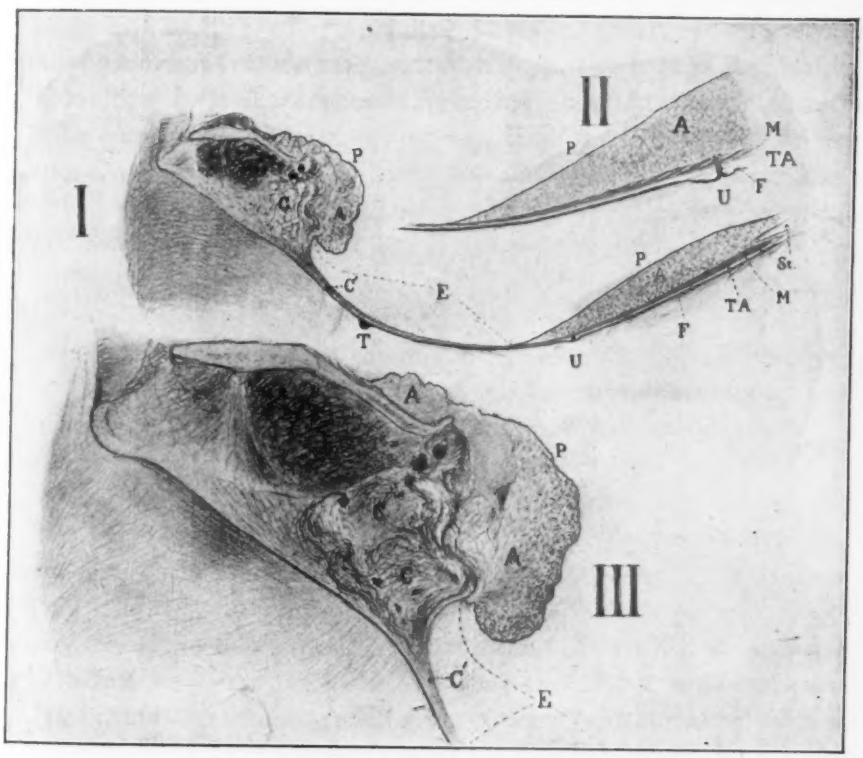

FIG. 3.

I. Sagittal section of the abdominal floor of Fig. 1. II. Enlarged anterior portion of I to show detail. III. Posterior portion of I to show detail.

A. Adipose tissue. C. Fragments of the prepubian tendon extending from the os pubis to the region of the inguinal ring. C'. New formed connective tissue taking the place of the rectus abdominis muscles and abdominal tunic. P. Peritoneum resting upon a thick layer of adipose tissue, A. E. Area devoid of peritoneum, adipose tissue. rectus abdominis muscle and abdominal tunic and representing the extent of separation between the margins of the ruptured parts. St. Sternal cartilage. M. Rectus abdominis muscle. TA. Tunica abdominalis. F. Skin and skin muscle. U. Displaced umbilicus. T. Displaced teat.

our practice, the skin and its muscle did not suffice to stay the progress of the rupture, but gave way, causing eventration and necessitating immediate destruction of the patient.

In those very rare instances where violence has played an essential part there need be no premonitory œdema, the symptoms appear very suddenly, the tumor is large, the pain intense, the expression anxious, the body bedewed with cold sweat, the respiration hurried, the pulse rapid and weak and the patient tends to quickly collapse from shock or hæmorrhage.

The character and extent of the lesions, with the reparative efforts in a surviving case, are well shown in Figs. 2 and 3, in which it is seen that the peritoneum, prepubian tendon and abdominal tunic have all parted just anterior to the pubis and passed forwards about half way to the sternum, dragging with them for a part of the way the teats. Posterior to these and occupying the area previously filled by them, is an extensive expansion of dense connective tissue, C′, which has served instead of the ruptured parts.

In Fig. 3 it is shown that the subperitoneal fat, A, does not invade the ruptured area, E, but seems to depend for its formation upon the presence of the peritoneum itself.

The prognosis of complete rupture of the prepubian tendon is very grave, most mares, along with their foals, perishing before the conclusion of the pregnancy during which the rupture occurred.

If parturition is safely passed the animal is likely thereafter to breed without danger or difficulty, but is so unsightly that her value for this purpose is seriously diminished, or she may do ordinary slow work, but here the unsightliness becomes still more serious and few persons are willing to use such an animal. The foal in the uterus at the time of the rupture usually perishes, but if the mare survive, succeeding foals are born with the same safety as though the lesion did not exist.

When a threatened or beginning rupture is promptly recognized and appropriate measures for prevention or relief applied, the prognosis is highly favorable.

The opinion of Fleming that extensive œdema of the abdominal floor in pregnant mares is unimportant and will quickly disappear after parturition with little or no attention, has led to serious disaster in our hands, when followed.

Œdema in advanced pregnancy in the mare is a serious condition, and should be regarded as a precursor of rupture of the prepubian tendon, which calls for prompt and energetic handling. If left without attention many of the mares will succumb from rupture; if proper attention is rendered the danger will be almost wholly averted.

In the handling of threatened rupture of the prepubian tendon, mechanical support of the greatly overloaded and weakened abdominal floor should receive our first consideration. When-

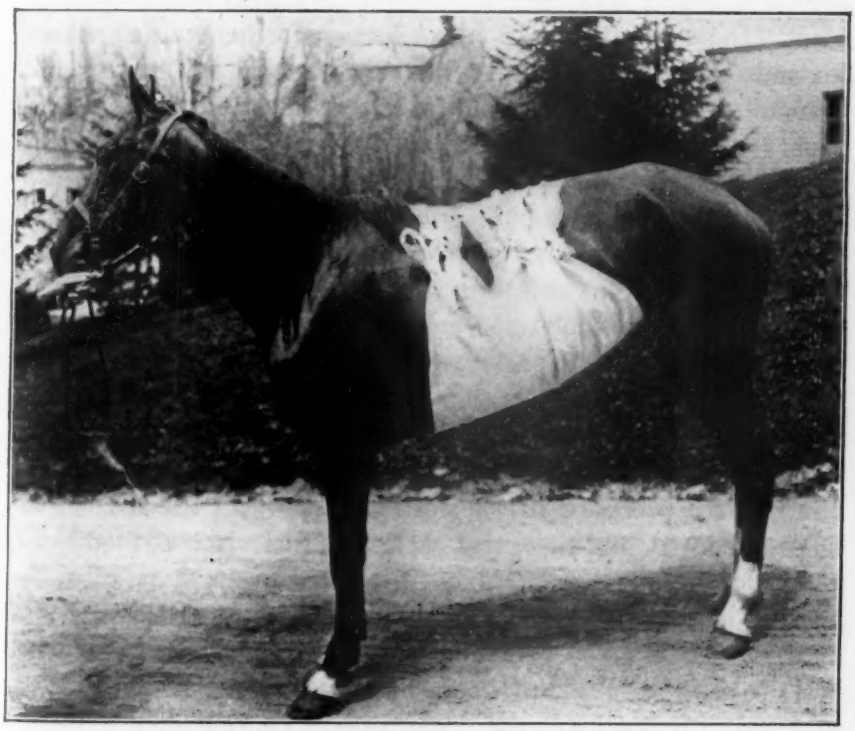

FIG. 4.

Emergency bandage for rupture of the prepubian tendon, illustrating method of so crossing the bandage tails as to secure adaptation to the form of the abdomen.

ever extensive œdema along the floor of the abdomen occurs in a mare far advanced in pregnancy, and which cannot clearly be referred to other causes, we advise the immediate application of an abdominal bandage of canvas or other strong material. The bandage should be constructed with 8 or 10 strong buckles and billets and fitted to the oval form of the abdomen by means of a gore placed in the centre of the canvas. We do not at all times have the required time for properly constructing the bandage, but in order to avert immediately threatening disaster an emergency, many-tailed bandage should be quickly applied. In order to adapt this to the oval of the abdomen the tails should be crossed so that the most posterior lower tail shall be tied to one of the most anterior upper tails, as is shown in Fig. 4, and the remaining tails united upon a similar plan as indicated in Fig. 4. The spine and the position where the ends of the bandages meet should be amply padded to avoid pressure necrosis of the skin from the buckles or knots, and should be carefully readjusted daily or as often as conditions may dictate.

In applying the emergency bandage to cases where the tendon has already parted or seems very imminent, it is important to get it quite tight, and in order to facilitate this it is best to tie a solid loop on each upper tail through which the lower tails may run as through a pulley. A given tail cannot be properly tightened at the first effort, but one after another tightened as well as convenient at the first tying, and as soon as all are fastened go back to the first ones and tie them over again and continue the process until the desired support for the abdominal floor is secured, and the great weight of the viscera lifted from the abdominal floor and largely transferred to the spine through the bandage. The decrease of the weight of the abdominal viscera is also of very great importance. We should lessen the weight of the digestive viscera by withdrawing all bulky food and replacing it with limited quantities of concentrated aliment. We might hurry the unloading of the intestinal tract by the aid of small doses of eserine sulphate, half grain every half hour.

If the tendon has parted the induction of premature labor should receive careful consideration.

As a rule the foal perishes unless aid is given. Even under close watching the uterine contractions go on unobserved and cause the death of the foal through separation of the placentæ before adequate expulsive force is brought into play, most of which was destroyed when the abdominal floor gave way, leaving the uterus almost alone to expel the fœtus. It therefore seems desirable to anticipate this danger to the fœtus by bringing about artificial delivery not later than the completion of the 11th month and by close attention bring about a prompt delivery in a way to best safeguard the life of the fœtus. The premature delivery is best effected by carefully dilating the os uteri with the hand, grasping, and, if necessary, cording the parts presenting, and applying moderate traction to compensate for the lost expulsive power of the abdominal muscles. It is to be remembered that it is best to have the patient in lateral recumbency during delivery as this raises the fœtus approximately to a level with the pelvic inlet, while in the standing position the fœtus drops down below the pelvis and rests upon inert parts.

If premature delivery is not decided upon the mare should be closely watched and prompt aid given on the first sign of labor.

After delivery the bandage may be removed at once and the case dismissed if the tendon has not ruptured; if it has ruptured the bandage should be readjusted and retained until such time as we may believe that the ruptured tissues have healed and the weakened abdominal floor has been reënforced by the new formation of connective tissue as indicated at C′ in Fig. 3.

The mare may be retained merely until the foal is ready to wean, if she is not desired in her condition; but she may readily be retained permanently as a brood mare with reasonable assurance that thereafter she will foal unaided, or she may be used at moderate work without noticeable discomfort.

In the very severe cases, where the skin and skin muscles are giving way so that eventration is imminent, or where accompanied by shock and serious internal hæmorrhages, the mare should be promptly destroyed, after performing Cæsarian section.

THE VETERINARIAN IN HIS RELATION TO THE HYGIENE AND SANITATION OF THE FARM.

By Charles E. Marshall, Ph. D., Professor of Bacteriology and Hygiene, Michigan Agricultural College, Lansing, Mich.

A Paper presented to the Annual Meeting of the Michigan State Veterinary Medical Association, Lansing, February, 1905.

It may not be in my province to appear before you this evening for the purpose of advocating greater attention or a closer relationship to those conditions existing on the farm, which make for health and soundness in domestic animals. The position which I occupy brings me, on the one hand, in intimate relation with the veterinarian, and on the other, with the farmer. I serve both, and from my point of view, am able to detect a manifest need of a unity of these two factors, both of whom have many common interests. In a recent review of the literature covering the hygienic phase of breeding, I have been able to note how, elsewhere, the veterinarians have united with breeders and stockmen in the studies of various questions important to both. Such united effort and harmonious coöperation in this country, so far as I am able to ascertain, is wanting, and veterinarians find it difficult to define and establish very definitely their rights and privileges. They seem constantly beset with troubles and obstacles, which are apparently sometimes insurmountable in our present condition of organized society. The stockman assumes the attitude of antagonism toward the veterinarian, thinking, I suppose, that his is a professional graft, without allowing the farmer his due. I am led to think, therefore, that this state of affairs is in no small part brought about by an unsympathetic relation existing between the veterinarian and his agricultural patron.

An apology perhaps may be necessary in raising this subject, but I assure you that I find my excuses in the fact that I have heard so much from both sides; I have considered it so often; and I have seen the need of coöperative sympathy so

many times. Accordingly, it is not strange that I am led to suggest some adjustment in hygienic and similar matters; and, further, to state that it is my opinion that the veterinarian is in a better position, or may put himself in a better position, to offer necessary advice and counsel than any one else, in all of those relations which he may bear towards the farmer, and especially those matters which pertain to stock-raising. It is a common matter to hear that the practice of the veterinarian will be interferred with by a too close relationship existing between the farmer and himself concerning hygiene and sanitary practices, but this seems chimerical. The veterinarian, on the one hand, contends that if certain procedures could be simplified sufficiently for the farmer, the former would suffer professionally and financially because the farmer would not call upon him for his aid; and, on the other hand, the farmer contends that all the veterinarian seeks is his professional fee.

It is patent that the veterinarian is not sufficiently foresighted in this matter, and the farmer is altogether too suspicious, to avoid this state of affairs. There can be no doubt that before the veterinarian lies a very broad field in action and influence. By giving simple facts and treatment to the farmer, the veterinarian, in return for his services, secures the confidence and good-will of the farmer, which will return many-fold to him. Physicians have learned this, for they are not so zealous about professional rights, and they maintain that diseases are better handled from the standpoint of prevention or prophylaxis than from that of cure, and that simple remedies and treatment belong to the home and not necessarily to the professional class. They believe, too, that they are progressing more rapidly by so viewing the situation in a broad and charitable manner, than by urging professional claims or technicalities to that extent which will necessitate a call from a physician. As an illustration, it does not seem that veterinarians would suffer in the least if they could recommend the use of the simple device for milk fever, which has already come before your notice, rather than to attempt to confuse the farmer to the extent that professional treatment be

required. Professional trickery is practiced in good faith, but the layman, although conscious of it, never knows when it applies to him. The farmer, however, is shrewd enough to ascertain sooner or later whether the veterinarian has been working for his interests or simply making a professional bluff. It is advisable to be honest at all times, perfectly frank when it is possible, for in the end benefits will accrue. Therefore, instead of trying to hoodwink the farmer into the necessity of treatment for his animals, it appears that it would be far better to make the veterinarian so essential to success that the matter of treatment of animals will come naturally and satisfactorily, for treatment will always be required, whether desirable or not.

It must be said for the veterinarian that he has much to contend with in the matter of treatment of domestic animals, because it is not a financial gain to the farmer to pay fifteen dollars for treatment of a ten dollar pig. On the other hand, the farmer would learn to utilize professional services in such a manner as to place his relation with the veterinarian upon a business basis, the same as he has learned to assume in treating with an architect whom he has engaged in the construction of some building. In the architect he recognizes skilled services, which he himself does not possess, and he has learned by experience that what the architect gives him he is obliged to pay for. The sooner, therefore, that the farmer learns that in the veterinarian he is securing services which stand for so much money value, and that he is simply doing his part in enabling society to maintain a professional man of this character, the sooner he will be in a position to fully appreciate the services rendered. He should further realize that every professional man has expended much time and money in acquiring his professional skill, and that after securing the skill, he should not be asked to give it to society without proper remuneration. When each party is able to see the correct position of the other, then it will be possible to get together in closer union. It is not this relationship, however, that I wish to dwell upon to such an extent as to consume all my time, but, rather, to delineate a scheme and

the factors of a scheme which will help to establish harmony.

The field that I should like to emphasize, and one in which I believe the veterinarian can be made very useful, and, in fact, as time goes on, can become indispensable to the farmer, is that of farm hygiene and sanitation, as they pertain to the management and health of domestic animals. It extends farther, because the management of health is fundamental to financial success on the part of the farmer. This means that the veterinarian should be conversant in matters of breeding, rearing, and feeding animals, as he is conversant with diseases and their treatment. He should not only be able to approach it from the veterinarian's standpoint, which should be thoroughly scientific, but should be well posted from the standpoint of a successful stock-grower. These two sides exist, and will always exist, because what the scientist advocates is not always the most desirable thing for the farmer to practice. This is neither the fault of the scientist nor the fault of the farmer; it is the failure of both to provide a middle man, and this middle man should be the veterinarian who can take the middle ground and make himself a necessary and useful consultant. In addition to the studies already mentioned, in which the veterinarian can post himself, and keep thoroughly posted, there are the questions of water supply, stabling, ventilation, drainage, and various other factors which enter in the handling of livestock. So far as I have been able to ascertain, at the present time the veterinarian and the farmer do not come together in these matters, and if the farmer asks advice of the veterinarian, he never feels certain that the latter's advice is wholesome and desirable; or, in other words, founded upon up-to-date practices. This comes from a lack of preparation on the part of the veterinarian who would doubtless be in a better position to handle the farmer with reference to diseases, sanitation and hygiene if he could make an early start from the side of prevention in the foregoing matters of breeding, rearing, and feeding, rather than from the side of cure, and also would be just as able to secure his fees in consultation over the proper location for a well, as

he would to secure them after an animal has died from drinking the water from the well.

Let us look at the matter a little more closely, and by more detailed analysis of the situation. Not one farmer in ten knows the ins-and-outs in breeding. What knowledge he has is that which has been picked up haphazard from his neighbors, who know little more, and probably less than he does, but possess more positive notions about things. He little realizes that in the matter of breeding there is a hygienic transmission of points, as well as a physical contour transmission, in which he is so much interested. He has been unable to study the methods in detail of great breeders. He either omits one essential in breeding in order to arrive at another, or falls flat by failing in both. The results, therefore, are usually disastrous. If the farmer knows that a certain veterinarian is a man of repute, is scientifically and practically familiar with breeding, can give him knowledge where he fails, can advise him in a useful, intelligent manner, he will not hesitate to pay that veterinarian a fee which he could not possibly secure by the treatment of one or two animals, when the farmer is discouraged and almost ready to go out of business. The farmer, in seeking advice, will soon learn whether this advice is wholesome, or not, and whether he is getting anything from it. If such advice is proving satisfactory, has won money for him, and improved his conditions, that farmer will recommend the veterinarian to his neighbors, who, in turn, will be willing to seek in detail the counsel which has served so beneficially in one case. It is true, that in the matter of breeding, this advice may be peddled from one neighbor to another, and the veterinarian would receive nothing from what he has given so freely to one stock-grower, yet the conditions of one farmer are not the conditions of another, and the advice to one man will not necessarily be that which should be given to the next. There are always new questions arising concerning developments in breeding processes, which must be answered, and answered by an expert. This expert may be the veterinarian. There is just as much danger in scattering methods of

treatment and diagnosis as anything pertaining to breeding. Many farmers need and want an overseer. It will not do for the veterinarian to pose for a breeder or an expert in breeding unless he can back it up with evidence so overwhelming that the farmer is obliged to accept it. This means study and persistence on the part of the veterinarian. In other words, it is the advice of a family physician. This should be the function of the veterinarian.

Rearing of animals also means more than the ordinary mechanical handling which is so commonly indulged in by the ignorant farmer. Of five men put in charge of animals, it would be exceptional to find one capable of handling them. In short, the experiences of farmers who raise many animals demonstrate that herdsmen true to their calling are rare. The veterinarian who is making a success of his profession knows, or should know, how to handle animals; for although he is not actually engaged in the management of sound animals, he is constantly brought in contact with sick animals as patients, and these demand more of his skill in handling than would sound ones; consequently, if he is able to successfully handle sick animals, he should be sufficiently familiar with sound ones to give good advice, and advice that may be applied.

Feeding is a large subject to treat. It is one that is discussed to a great extent at the present time at our institute colleges, and universities, and it requires close study to keep in actual touch with its progress. The farmer usually does not. Many a man who has attempted to raise animals, has failed largely because of his inability to handle the feeding question. He may have the material on the farm, raise it successfully, provide it in abundance, but when it comes to giving it to the animals, he is a complete failure. To feed successfully, one must be familiar with the values of every crop grown, and the bearing of each crop upon the food ration, as well as the cost of the crop produced. He must be able to use rations which yield good results, not only to the herd as a whole, but be actually competent to adapt rations to suit individual idiosyncrasies. He must be

able to run over a list of animal foods, select those which will be least expensive to the farmer, and if the farmer does not possess them, know where to procure them, how much they will cost, and how much they will return to the purchaser in the end. Inasmuch as our animal foods keep increasing year by year, in varieties, and inasmuch as chemical analyses of these foods are made, it means that the veterinarian, if he is to be posted, not by mere whim or fancy regarding food, but upon actual values of foods as they are represented, must work hard. While he may not be possessed of much experience in the raising of crops, it would not come amiss if he should be able to indicate at times what crops are adapted to certain soils. The family physician does this; the veterinarian could occupy a wider range.

Again there is the subject of stable construction,—what the floor should be, the character of the lighting, what should be the nature of the stalls, and the system of ventilation. Sound advice concerning these matters will always be welcome, because no farmer is desirous of spending hundreds of dollars without some knowledge of what he is doing or trying to do. Usually he would feel better satisfied if he could talk the new building over with some one, its arrangements, its contents, etc., provided he had the utmost faith in that person, and he would be perfectly willing to pay a fair price for this service.

The water supply, the location of the barn, elevation of the ground, the drainage, the handling of contagious diseases, isolation, etc., all should aim at control, rather than at treatment. The farmer who has succeeded in securing good counsel from his veterinarian concerning proper rearing, stabling, feeding, and other matters, will be not only willing, but anxious to have the same veterinarian on hand if there is any treating in sickness. He has learned to have confidence in his opinions, he has learned to depend upon him, and when it comes to sickness, it is the same man that he seeks to help him out. If he fails to restore health, he rests assured that the veterinarian has done all in his power to help him; he has stood by him in every

other respect, even if he has failed in bringing health out of sickness.

It is this field, so crudely indicated, it seems possible to open up; and the veterinarian, if he can in one way or another secure the coöperation of the farmer, can do more good by warding off disease than by treating it, in the case of domestic animals. A competent veterinarian will be able to produce more satisfaction, will establish himself more firmly in the heart of the farmer through such efforts than through any efforts in treatment of diseased animals. It is this confidence that makes one veterinarian better than another. Of course, veterinarians who live in cities will not be interested in the discussion of the relationships existing between farmers and veterinarians, but those living in small towns or in country places, depend largely upon the farmer for their practice. The pertinency of what I have said may be illustrated by considering many of our old quack horse-doctors, without diplomas, without training, who have maintained the confidence of the farmers by their common sense, by their interest, and by their help; who have increased their sphere of influence, if it may be so called, in their efforts to do their best for the farmers. I do not refer to the ordinary quack, who is a parasite on society, but to those good old souls who are willing to go miles to help their neighbor in an emergency because their neighbor may want them to go, without remuneration, unless this neighbor is willing to repay them in some way or other. It is such men who win out, who gain the confidence of the farmers, and, without diplomas, without training, have a firmer hold upon the farmers than a host of veterinarians, well trained, and some of them experienced, could possibly have.

IT is announced in the press dispatches from the West that Japan intends to send several representatives to study closely the horses shown at the Lewis and Clark Exposition in Portland this fall. It is also stated that China will be officially represented in this regard. Much hope is held out that the Island Empire may make large purchases of breeding animals.

DISEASES PREVALENT IN THE PHILIPPINE ARCHIPELAGO.

By M. J. Myers, Veterinarian, Board of Health, Manila, P. I.

We have in these islands almost every known disease that animals are heir to.

Many obstacles that exist at present will have to be overcome before a successful campaign can be conducted against them. The native is not much in favor of reforms, especially when it becomes necessary to destroy animals that he may possess. My experience of two years has been that instead of help from them they will do everything in their power to hinder our work. During the Spanish days when an animal was found affected with some communicable disease it was sent to the country and usually turned at large, thereby coming in contact with the animals of that section. By such methods it is only reasonable to expect that infection of the whole Archipelago will follow.

The diseases below enumerated are found in every section of the islands.

Glanders—farcy.
Surra.
Rinderpest.
Foot-and-mouth disease.
Hæmorrhagic septicæmia.
Hog cholera and swine plague.
Measles of the pig.
Lymphangitis contagioso.
Cholera of fowls, etc.

We also have other infectious diseases common in the United States, viz.: Tetanus, strangles, pneumonias, anthrax, Texas fever, etc.

Practically all of the energy that has been expended toward eradicating them has been directed against rinderpest, while the others received but passing notice. To me, at

least, some of them are equally as destructive as rinderpest.

The cases of surra, glanders, foot-and-mouth disease, and lymphangitis contagioso can be counted in the thousands.

Glanders in these islands is so common that one would not speak of how many cases are to be found in a certain locality, but of what percentage of the whole equine race is affected. Under the present conditions this disease is becoming more prevalent from year to year; it will require energetic and systematic measures to ever suppress or control it. Glanders in man is not an uncommon happening here.

Surra is also very prevalent, and now has such a foothold that I am of the opinion that all animals (wild and domestic) would have to be destroyed in order to eradicate it entirely. I have had several lots of horses and mules under observation in which the mortality reached 100 per cent. Imported animals appear to be more susceptible to surra than those that are natives of this country. In some few cases among the equine race there is a spontaneous healing, but they are very rare after they have become infected. Cattle and carabao do not seem to be inconvenienced a great deal on account of the trypanosoma in the circulation, for they will work every day and thrive as if under normal conditions; for this reason cattle and carabao are especially dangerous, as they can spread the infection to a large number of animals and themselves not even be suspected.

Rinderpest is present at all times, but the outbreaks since the epizoötic one of 1900 have been of an enzoötic nature. The serum treatment has been used for the purpose of producing an immunity in animals that have been only exposed to the disease, and also in animals that are actually diseased (showing clinical symptoms) as a curative agent; in the latter case it is given in large doses of 200 or 300 c.c. The serum inoculations have been but partially successful, so it is difficult to say just what amount of benefit has been obtained from the serum treatment towards producing an immunity. Rinderpest is very prevalent in China, and as nearly all of the cattle consumed in these islands are imported from that country,

rinderpest is introduced with nearly every ship-load of animals.

Foot-and-mouth disease is of little importance here when compared with some of the other diseases, so very little attention is given to it.

Hog cholera, swine plague and measles are found on a post-mortem examination daily at the abattoir in Manila, all of which are condemned and cremated. There have been a few reports from the provinces where hogs were dying in large numbers. An investigation was made and the disease found to be cholera. Hog cholera here seems to be of a sporadic nature.

Lymphangitis contagioso, is very prevalent, but usually yields to proper treatment, although some cases persist for months. The rate of mortality is very low if the animal receives treatment. This disease may be mistaken for the cutaneous form of glanders (farcy), but one soon learns to differentiate one from the other. Surgical treatment is usually all that is required.

Texas fever made its appearance in a small shipment of cattle coming from the United States, which originated from north of the Federal Quarantine Line; all died with but one exception a few days after landing, as a result of an inoculation of 1 c.c. of blood from a China steer (Texas fever immune). All importations of cattle to these islands should come from a country that is infested with ticks (*Boöphilus annulatus* or *Boöphilus australis*), as all of this country is infested with the *Boöphilus australis*.

Tuberculosis is practically unknown among animals in these islands, but is very common in man. The animals here are not kept confined in close stables as in the States. If I remember correctly, there was but one case of tuberculosis found on post-mortem at the abattoir since American occupation.

Actinomycosis was found in a bull imported from the United States for breeding purposes, and died shortly after arrival.

Anthrax has been reported from the north central portion of the Island of Luzon.

FOOT ROT IN SHEEP.

By S. H. Bauman, V. S., Sheldon, Iowa.

Read before the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

In selecting this subject my object is simply to give you a few observations I have made in actual practice on a very troublesome disease among sheep, and one that when it makes its appearance on the farms under the methods that have usually been in vogue, seems very difficult to eradicate, much more so than scab, owing to its persistency to keep recurring where the farmers are positive they have fully gotten rid of it, and a farm once infected seems to retain this infection for years.

There seems to be a great tendency to confuse it with thrush, mud fever, closing of biflex gland, bruises, punctures, due to pricks from hedge thorns, especially after trimming the hedge, and punctures from closely trimmed brushland are all classed as foot rot by some writers in the agricultural papers, but they are simply mistaken.

Low and swampy ground has nothing to do with true foot rot, as some of the worst cases seem to be on the dryest and most rolling ground, where water was procured from tanks. The first symptom noticed is lameness in one front foot, at first not very marked, but gradually increasing and in many cases extending to all the feet, but usually the front feet are the ones most seriously affected. It is very common to see half or even a larger percentage of a flock affected in many stages, some only slightly lame, others grazing while on their knees, and keeping this position much, if not all the time. One peculiar thing is the severity of the case and the remarkably good condition the affected animal will keep in while in the worst stages of the disease. I do not mean to say that there is no shrinkage of flesh, but what surprises me is that there is not more. The disease will continue in a flock during one entire season, and from one year to another, with little or no abatement. Warm and damp weather seem the most favorable for its development, but think this is due to the action of magots and other parasites that prey

on the diseased parts during the time that flies are prevalent.

There is a very offensive and characteristic odor that is a true diagnostic symptom in recognizing this disease. A person can easily detect this odor without examination, and can pronounce with safety cause of trouble in flock.

In the earlier stages there is moisture between the toes, extending from heel up into the hair in front of foot, and to a casual observer resembles quite closely thrush in a horse. The micoörganism that causes the trouble seems to burrow through the sole and forms cells between the sensitive portion and bottom of the hoof, leaving in some cases quite pronounced chambers of broken loose sole. It much resembles the action of a borer in a fruit tree in the work it does.

After the disease runs for a time the foot very often swells around the coronary zone. The moisture disappears and in its place we have a discharge of a thin starchy fluid, evidently pus. The appearance and discharge seem to be of a fistulous nature, somewhat resembling the condition we find in a quittor, and indicates a necrotic area of considerable extent, and when not treated seems to keep on burrowing without any disposition to abate.

Foot rot is contagious by inoculation and the germ is very tenacious and hard to get rid of, and lives quite a long time when protected from severe weather. What the germ is I do not pretend to say, but think it is of the same nature as fistula or poll-evil or perhaps the *Bacillus necrosis.* The disease is readily transmissible from one animal to another, by coming in contact with an affected animal, by being driven over a public road where affected sheep have been driven, by an affected sheep getting through fence into a neighboring pasture, or by buying a ram that had been affected and supposed to have been cured, and probably the worst outbreak that came under my observation was by using a pair of hoof trimmers that had been used on affected sheep, which were then used on a healthy flock. In a very short time every sheep in the flock contracted the disease. Many owners become frightened or do not care to take

chances, so they treat the sheep until they show no lameness, and then sell or ship them where they are almost sure to break out again, and in this manner the disease is spread into new fields and innocent parties suffer. The tendency among farmers is to unload on someone else and handle other stock for a time. There is practically no danger from death, but loss is due to shrinkage. Farmers are very much inclined to say nothing about having the disease, so a person in practice has very little chance to investigate, but it would surprise many of us were we to know the extent of the disease. Were our laws different so that a veterinary inspector could have the power to investigate and order proper treatment, it would be but a short time until foot rot and many other contagious diseases could be eradicated. The main trouble is with the "don't care" farmers. They will do nothing unless they are compelled, and must be watched until they follow instructions or it will not be done.

As to treatment, the only sure way to eradicate the disease in my experience is hand dipping. Do not rely on tank dipping. The first step is to go over the whole flock and trim the feet of every sheep quite closely, and the diseased ones in particular; cut out the sole until you find every sinew and particle of detached sole or wall. Use heroic measures, and never mind a little blood should it be necessary to cut into the sensitive tissues. Almost any antiseptic will cure if all the diseased parts are exposed and properly treated. I have known parties to use undiluted muriatic acid, 90 per cent., solution carbolic acid, turpentine, coal oil or a saturated solution of sulphate of copper, without proper trimming, with practically no results. My method is to trim very close, as advised above, hand dip with quite a strong antiseptic and repeat every day for several days. Separate the diseased from the well ones in a pasture not contaminated and watch closely. The diseased ones should be gone over every day until all signs of lameness and disease have disappeared. In these cases think I have had best success with a 20 per cent. solution of formalin, then covering the feet with tar and placing a pack of cotton and a bandage over the feet.

To eradicate the disease the owner must give up everything else and tend to the sheep, and he will succeed. I would also prohibit turning sheep into pastures where diseased sheep had run for ten months or even one year. Haul out all manure and some of the clay from the yards and scatter over the farm land. Keep out all sheep and scatter quicklime and other antiseptics over the lots. Be sure to have the ends of wool clipped from sides where feet come in contact while they lie down, and use a good dip over these parts. Burn all clippings of wool and hoofs. Commence early and persist and you will succeed. The period of incubation seems to be very short. I know of one case reported to me in which parties claim disease developed in five days after exposure. In talking with a sheep man from the West he said he had seen the disease in the highest altitudes of the Rocky Mountains, so location and climate seem to have nothing to do with true foot rot.

"A veterinary surgeon cannot practice without the REVIEW."—(*J. T. Nattress, V. S., Delavan, Illinois.*)

WHAT WILL NOT A COW SWALLOW.—The following newspaper clipping is forwarded to the REVIEW by Dr. H. J. Herrington, Dunlap, Iowa, who vouches for the facts stated in it: "A cow belonging to Ed Lehan and Ben Rose, who occupy the Lehan farm north of town, exhibited signs of sickness about the first of March. In a short time Dr. Herrington, the veterinarian, was called, and after a diagnosis of the case, pronounced the animal suffering with some foreign substance in the stomach. A short time ago the cow died, and at the request of Dr. Herrington, who was unable to be present, Mr. Rose made an examination of the stomach, which disclosed a miniature rolling mill. The following articles were preserved for exhibition and turned over to Dr. Herrington: Five rivets ranging in size from one-fourth of an inch to an inch and one-fourth, three rivet washers, four shingle nails, one small screw-eye, four ordinary carpet tacks, and two fence staples averaging about one and one-fourth inches in length. In addition to this Mr. Rose found a quantity of solder which had been melted from tin cans and which the cow had lapped up with ashes and salt, and this accounts for the other articles in the stomach, as well."

NOTES ON STRONGYLUS CONTORTUS.

By Louis A. Klein, V. M. D., Professor of Veterinary Science in Clemson College, S. C., and State Veterinarian of South Carolina.

In the course of an investigation into several outbreaks of verminous gastritis in calves and young cattle, one case was met with in which the parasites (*Strongylus contortus*) were discovered in an unusual location. In this animal, a heifer 18 months old, only a few of the worms were found in the abomasum and a few in the duodenum, but in the cæcum there were a large number. None of the worms were attached to the mucous membrane. Those in the abomasum and duodenum were lying in the thick, tenacious mucus which covered the surface of the membrane, while those in the cæcum were floating in the dark-brown watery fluid with which that reservoir was filled. The abomasum and small intestines were entirely empty. The animal had been too weak to stand for four days previous to death, and during this time there had prevailed a severe diarrhœa. From these circumstances, it would appear that the animal had reached such a low condition that the blood did not afford sufficient nourishment for the worms and they were leaving the body—those in the cæcum and duodenum being on their way out, and those in the abomasum having detached themselves from the mucous membrane preparatory to leaving.

This case shows that it is not always sufficient to look in the abomasum for the worms. It also shows that it is not always safe to exclude the worms as the cause of the diseased condition merely because they are few in number.

Friedberger and Fröhner[1] say that unless the autopsy is made soon after death the worms may not be found, as they are quickly destroyed by digestion in the stomach of the cadaver. In the case referred to above the animal had been dead 30 hours when the examination was made, and yet numerous worms were found unharmed by the digestive fluids. The circumstances in this case would seem to justify the conclusion that had the life

functions continued a little while longer, the worms would have all passed out of the stomach and intestines and this hypothesis would also explain the absence of the worms from animals that had apparently died of the disease.

Friedberger and Fröhner[1] and Neumann[2], referring especially to the disease in sheep, and Law[3], writing of *Strongylus contortus* in ruminants in general, state that the disease usually appears in the spring and summer, but in all the cases observed by the writer in South Carolina the first symptoms did not appear until late in August and early in September and the deaths occurred in October, November and December. The cases reported by Falsetter, Knight[4] and Stiles[5] in Texas also occurred in the same seasons of the year.

Only the young cattle suffered from the parasite—those under 1½ years old which were not suckling or being fed by hand. None of the grown cattle exhibited any of the symptoms of the disease, although on most of the infested farms, they used the same pastures during the day and, in some cases, the same stalls at night. This absence of visible symptoms, however, can not be accepted as positive evidence that the adult cattle are not infested with the worms, for there is reason to believe that grown cattle can carry the parasite in considerable numbers without apparently suffering from its presence. This point must always be considered in treating an infested herd.

The coal-tar creosote treatment recommended by Stiles[5] was advised and proved quite efficacious. The drug was prescribed in the following doses, shaken up in a pint of water: calves 3 to 8 months old, 25 to 50 minims; yearlings, 75 minims; 1 to 1½ years old, 2 drachms. The owners were advised to give the medicine to all the young cattle, the exposed as well as the sick, and to withhold feed for 12 hours before and water for 6 hours after giving the dose. The treatment was to be given once a week for 3 or 4 weeks and the animals were to be kept out of the infected pastures and to have clean drinking water.

On one farm, where all the young cattle but one had been

lost for three years and where ten had died last fall, the medicine was given to twelve "long-yearlings" which had been in the infected pasture since spring. They were in poor condition, thin and hide-bound, but all improved rapidly after the treatment was given four times.

On another farm, where eleven calves had died during the fall, the treatment was given to twenty-one calves, several of which exhibited pronounced symptoms of the disease—œdematous swelling in the sublingual region and diarrhœa—and all showed loss of condition. All recovered, the treatment being given four times.

Three affected heifers on another farm, where two yearlings had been lost from the disease, also received the treatment and recovered.

The treatment was recommended to the owners of two other herds of cattle in which the presence of the parasite was established by post-mortem examination, but no report as to the application of the treatment or the results obtained has been received from them.

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1. Friedberger and Fröhner. Pathology and Therapeutics of the Domestic Animals (Zuill's translation), Vol. I, pp. 269-270.

2. Neumann, Prof. L. G. Parasites and Parasitic Diseases of the Domesticated Animals (Fleming's translation), p. 364.

3. Law, Prof. J. Text-Book of Veterinary Medicine, Vol. V, p. 254.

4. Knight, Dr. W. A. AMERICAN VETERINARY REVIEW, Vol. XXVII, pp. 522-525.

5. Stiles, Dr. Ch. Wardell. Seventeenth Annual Report, Bureau of Animal Industry, p. 371.

PRESIDENT KNOWLES, of the A. V. M. A., is quite sanguine that the attendance at the Cleveland meeting will be the largest in the history of the Association. More members and visitors were present at St. Louis than at any former meeting, many of them being attracted, no doubt, by the added interest of the World's Fair. Should this year's gathering exceed that of 1904 it will indeed mean interest and progress. The programme justifies the best attendance ever.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

OUTBREAK IN SHEEP.

By A. W. WHITEHOUSE, V. S., Laramie, Wyoming.

I send some notes of work done on a disease which attacked a band of sheep running near Laramie. The investigation resulted negatively, and I forward the description in the hope that some one may have seen a similar outbreak and have succeeded in determining the cause.

The band affected numbered about 2,500, all very good ewes, mostly two and three years old, with a sprinkling of old ones; they were in capital condition. They had wintered on the range about seven miles northwest of Laramie, getting snow most of the time instead of water, and being fed baled hay during storms. This range is covered with grass, there being very few weeds, a little greasewood, and very little other brush.

During the whole of March the weather was mild (for this climate), light snow storms alternating with thaws, the frost was out of the ground, and on the 15th there was grass from one to two inches high, and a few early spring weeds peeping up.

On March 15 7 sheep died, on March 16 6, on March 17 1, on March 18 3; total, 17. After this there were no more deaths or sickness, though the sheep were not moved.

I only saw one sick one alive, and with the exception of the herder, an unusually intelligent Mexican, no one had the opportunity of observing the others during life.

This herder stated that when he first noticed them they would be dropping back from the bunch as the rest fed along, and that they would seldom live many minutes after he reached them. He said that they acted like a man with pneumonia, and also described convulsions. All were fat, and those he had opened were pregnant two-year-olds, the lungs being affected, the bronchi and trachea full of mucus, and the other organs, particularly the kidneys, apparently healthy.

I was called in on March 17, together with Dr. A. L. Bailey, the Federal stock inspector. On arrival at the camp we found about 10 skinned carcasses there. The pelts and external mus-

cular appearances were in all cases normal. Opened three.

No. 1.—Ewe, two years old, very fat, pregnant. Lungs, dark purplish red; appeared consolidated through entire area—one slight adhesion on right side. Bronchi, bright scarlet, and contained white frothy mucus. Trachea, scarlet and inflamed, gradually improving towards larynx, which was normal; much of the white frothy mucus. Pericardium filled with dark red fluid. Small intestines, one or two slight areas of inflammation. Kidneys broken down; acute nephritis; air under capsule of one; urine tubes dry and white, probably occluded, in this one. Bladder empty and slightly inflamed. Spleen, dark reddish brown externally, grumous. Gall-bladder empty, orange colored, distended with gas. Fæces normal to soft. Paunch normal. Blood coagulates normally. From this case we preserved part of a lung, the heart, kidneys and spleen.

No. 2.—Ewe, two years old, fat, pregnant. Lungs, small areas of hepatization; areas of scarlet congestion, shading to purple; areas apparently healthy. Both lungs about equally affected. Bronchi filled with white frothy mucus, scarlet. Kidneys apparently normal. Bladder empty. Spleen normal. Digestive tract normal. Gall-bladder empty, gaseous, yellowish. From this case we preserved the kidneys.

No. 3.—Ewe, two years old, very fat, pregnant. Both lungs severely congested, but not extensively hepatized. Bronchi scarlet and full of white frothy mucus. Some nephritis. Gall-bladder full and normal. From this case we preserved the paunch.

We then drove to where the bunch was feeding and were fortunate enough to see one alive. When at some little distance we saw a sheep separated by about a quarter of a mile from the bunch and coughing most violently, with its whole body. Before we reached it it was lying down, and did not cough again while we observed it. It proved to be a two-year-old fat ewe, and went into convulsions as we arrived, having a most violent spasm of the diaphragm, shaking the whole body, and audible at a distance of several feet. This spasm accompanied expiration, and occurred about 25 to the minute. The ewe very nearly died at this time. Heart fluttering and irregular. Crowing sound in upper third of lungs, bubbling râle in middle third, silence in lower third; great bubbling in larynx, considerable in trachea. Bled her at nose and ear. Left her to drive through the bunch. On our return in, say, half an hour she seemed much better, but on laying her down the spasm re-

turned, though less violently than before. Temperature 104° F. Her breathing in the intervals of spasm was distressed, but not markedly so.

This sheep never rejoined the herd, but her carcass was not found. No doubt she died that night. The herder stated that when we saw her she had been sick two hours, longer than any of the others had lived.

On March 19 I again went to camp and opened all the other carcasses. All showed frothy mucus in the bronchi except one, which was full of clear mucus. All showed scarlet stain of bronchi and most showed scarlet stain of lower third of trachea. All bladders were empty. Found no more diseased kidneys. The brains of two appeared healthy. Examined no other brains. All gall-bladders contained bile, but they were not full. Took blood from the heart of one, and mucus mixed with blood from the bronchi of another, and forwarded these to the Bureau of Animal Industry for microscopic and bacterial examination.

Dr. Bailey forwarded to the Kansas City Veterinary College the heart, part of the lung, the kidneys and spleen of No. 1 and the kidneys of No. 2. These were preserved in a 40 per cent. formaldehyde solution. The results were as follows:

"Dr. Kinsley has completed examination of specimens received from you and finds the blood free from any known pathogenic microörganisms, neither did he find any such organisms in the solid tissues. The tissues from case No. 1 showed most marked lesions, the kidney and spleen being in a state of acute inflammation, the heart only showing cloudy swelling. The kidney in case No. 2 showed very little modification other than some congestion. Specimens from the solid tissues as well as the blood specimens were carefully examined for microbes and, as stated before, no pathogenic organisms were found."

The paunch of No. 3 was chemically examined by Prof. H. S. Knight, Chemist of the University of Wyoming. He reports:

"Examination and analysis of contents of a sheep's stomach received March 19.—Stomach seems to be normal. Arsenic, no test. Saltpetre, no test. Alkaloids, no test. Made a life test with a guinea-pig, also for alkaloids, and got negative results. HENRY S. KNIGHT, *Chemist.*"

Profs. B. C. Buffum, of the Experiment Station, and Aven Nelson, State Botanist, examined the balance of the contents of this paunch and found only grasses and harmless weeds.

The blood and mucus sent to Washington also yielded negative results. Dr. Salmon reports:

"A bacteriological examination and cultural test of this blood revealed the presence of numerous bacilli, cocci and saprophytic bacteria, which were plated and obtained in pure culture. Inoculations were made with these cultures into various experimental animals, but with negative results, indicating that the cause of the disease was not located in the blood. From the symptoms and post-mortem lesions you have described it seems probable that the sheep died of cerebritis, which is not infrequently observed in very fat ewes at the lambing season. It may result from food of a too stimulating nature, or an excess of coarse innutritious foodstuffs. Grazing the flock early in the morning while hoarfrost is still on the ground, is also said to be a cause, and accounts for this affection usually breaking out among sheep in the early spring and late fall, when they are thriving and in good condition."

The common factors in the disease appear to be the short duration (about two hours), the invariable fatality, the bronchitis with frothy mucus, the fact that though the appearance of the lungs vary in different cases each lung in the same case is equally affected, and the empty bladders. These last are accounted for by the convulsions.

A curious feature is that the sheep died for four days, after which no cases occurred, though the band remained on the same grazing ground till two weeks ago. There are no reports of similar losses from other camps.

In poisoning by the Death Camas (*Zygadenus venenosus*), as described in Bulletin 26, U. S. Dept. of Ag., Div. of Botany, "The Stock Poisoning Plants of Montana," the spasms and labored breathing are described, and also the congestion and hepatization of the lungs, but the Death Camas does not appear above ground here till the first or second week in May, and the bulbs are four or five inches underground. The stem is very weak, and it seems incredible that the sheep should be able to pull them up at that time of year.

Every trail when followed up seems to lead into a *cul-de-sac.*

AZOTURIA.

By ROBERT DICKSON, D. V. S., Seabright, N. J.

On Thursday, March 23, at 7 A. M., a gray mare, 15.2 hands high, five years old, was working in a team, and on their way to work about two miles from home the driver noticed her acting peculiarly, knuckling and faltering in her gait, and began

to sweat profusely. He turned back for home, and I was telephoned for. When I arrived found her up, trembling and nervous. Took her temperature, 102; respiration, 24; pulse, 56. I put her on salines, sent my slings over and told them to try and get her to stand in them; but right after I left she got down. I did not give ball, as is my custom, neither did I catheterize her. As I had seen so many die, I thought to do something different and let nature take its course.

Friday, 24th, I called and found her still down and thrashing, head all bruised and cut; temperature, 104; respiration, 60; pulse, 80. I applied mustard to her back and loins, and found no change.

Saturday, 25th, still down and thrashing; kept up same treatment; temperature, 103; respiration, 40; pulse, 60; ravenous appetite and very thirsty; no urine nor fæces had passed to date.

Sunday, 26th, the fourth day, appeared to be worse; added sedatives along with salines; temperature, 102; respiration, 60; pulse, 40; still kept thrashing; head and shoulders all cut and bruised, so that she could not see out of one eye.

Monday, 27th, at 7 A. M., she made a plunge and struggled to get up on her feet, just as the drivers in the stable were preparing to go out with their teams. They saw her and all ran to help her to get up and steadied her while she was on her feet. They got her in the slings as quickly as possible; she urinated and passed fæces and began to eat. When I arrived I found her very weak and trembling. This was at 9 A. M. Front legs were swollen to twice their normal size; temperature, 102; respiration, 60; pulse, 40. I gave her a stimulant and put the men to rub her dry and bathe the legs and do her up with cold bandages.

Tuesday, 28th, found her still weak and trembling, but doing well under the conditions; temperature, 103; respiration, 24; pulse, 60.

Wednesday, 29th, found her still improving, eating well, urine and fæces regular; temperature, 102; respiration, 20; pulse, 56.

Thursday, 30th, recovering fast, appetite good, urine and fæces regular; temperature, 102; respiration, 12; pulse, 50. Was taken out of the sling, walked about fifty feet and put back in the slings again. She acted well, with the exception of her near fore-leg, which she did not use so well, as it was stiff and stocked, with considerable œdema, and looked like a case of purpura, and I treated her accordingly.

Friday, 31st, still improving; temperature, 101⅔; respira-

tion, 12; pulse, 50. Front leg still swollen and very large at knee; had them rubbed down one way well with cold lotions and walked for five minutes. Seeing no bad effects, left her out of the slings.

Saturday, April 1st, temperature, respiration and pulse normal. Eating well, urine and fæces regular; ordered her turned out in a paddock and taken in at night. Did not see her then for five days, and on my next visit they were giving her light exercise in harness. I discharged her as cured.

I saw this mare a month after I discharged her, and she was working in team and carting heavy loads and appeared to be in perfect health.

PROTRUSION OF INTESTINES FOLLOWING CASTRATION.*

By JOHN THOMPSON, Iowa.

In June, 1904, I was asked by a stock raiser near this place to castrate some colts, and among them was a large, fine appearing three-year-old horse of trotting breed, that had been used some in the stud the previous spring. The horse mentioned was led out first, an ordinary casting harness applied, and secured in the usual way. The scrotal and inguinal regions were, to all appearances and manipulations, normal, testicles and spermatic cords well developed. The testicles, and probably about three inches of each cord, were removed by the emasculator. The only unusual occurrence noticed during operation was that there was no retraction of cords at time of scrotal incision and following the manipulations of testicles, nor the slightest struggle on the part of the animal. The horse on being released immediately jumped to his feet, pranced about, apparently as gay as ever, and was led back and tied in his stall—a single stall at one end of stable.

About one hour later, having finished other work, we returned to the barn to find the horse in great agony, struggling violently, balanced partly on his back with one hind foot forced through the barn wall, and profuse perspiration all over his body. Closer investigation revealed a mass of small intestines, about the size of a small bucket, protruding through each scrotal incision. The protruded mass had a congested and tumefied appearance, having been bruised by the animal during his struggles, and was covered with all sorts of dirt from the stable floor. Immediate destruction was advised and carried into effect. According to the owner a scrotal hernia had at no time existed.

* Read before the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

COLLINSONIA (HARDHACK) POISONING.

By G. E. CORWIN, JR., D. V. S., Lakeville, Conn.

One evening in the spring (April) I was called to attend a cow which was in great agony, suffering with the following symptoms: head swollen, especially marked about the eyes and throat; tremulous condition of the whole body; a profuse discharge, which was watery, from the eyes and mouth; intense itching of all parts of the body; mucous membrane of the eyes, nose, mouth and vagina, congested; frequent micturation; temperature 103.4° F.; lienteric diarrhœa, and in a semi-delirious condition.

At first it looked as though one might diagnose it as malignant catarrh, but surrounding conditions and history of the case put one on the guard.

The cow had been turned out to pasture for the first time, and returned to the stable apparently all right, until it was noticed that she wouldn't put her head through the stantion. Upon examination it was found that her head was swollen, and following this came the quick development of the other symptoms.

I examined the cow carefully, and by questioning got a very good history.

Did not give any diagnosis, but told the owner that I would call early next morning and left the following treatment: Potassi nitratis, ℥ ij, in a pint of water, and had her bathed every two hours with a solution of acid boracic and fl. ext. belladonna folia, in warm water.

On my arrival next morning I found the cow in as good condition as she ever was, chewing her cud and abatement of all symptoms.

A little trip about the pasture revealed the presence of the new sprouts of hardhack which, as could be seen, had been nipped off, and no doubt the cow was the victim of enough to cause a general poisoning from its irritant effects.

NOTE.—Common names of collinsonia, other than hardhack: stoneroot, house-weed, horse-balm, heal-all, etc.

POTASSIUM IODIDE IN A CASE OF NASAL OBSTRUCTION.*

By JOHN THOMPSON, Iowa.

A twelve-year-old, 1400-pound, chestnut gelding, used for heavy work, is brought for treatment. History shows that dif-

* Read before the Meeting of the Iowa State V. M. A., Jan. 25–26, 1905.

ficulty in respiration on severe exertion had been noticed some two weeks previously, a roaring sound at both inspiration and expiration. This condition had increased in severity day by day, and at this time, though being kept in stable and fed well, emaciation was considerable. The horse can be made to walk only at a very slow gait, and even when quiet loud roaring sounds accompany each respiratory act. Examination of the head proves one nasal passage to be partially, and the other completely obstructed. Anterior parts of nasal chambers show nothing abnormal. With the aid of a mouth speculum an attempt is made to examine posteriorly.

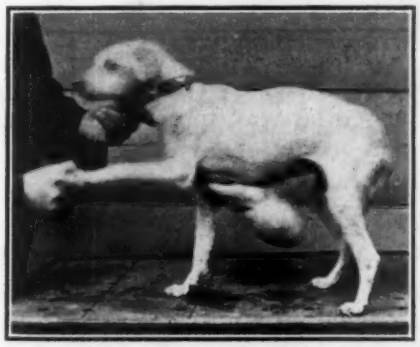
Animal struggles some, falls to floor and suffocation seems threatened. He soon, however, regains standing position, apparently no worse for his tumble. Tracheotomy is advised, but this step objected to by owner, he having no faith in the case, nor in me perhaps. Prescribed pot. iodide in two drachm doses three times a day given in moist feed, and lost sight of case.

Later I have learned that owner in order to get rid of animal gave it to a farmer on the same day, to take out of town and destroy. The latter took the prescription with the horse and commenced treatment. Within one week slight improvement was said to be detected. The treatment being continued at intervals for over six weeks resulted in thorough recovery.

CYSTIC MAMMARY TUMOR.

By HERMANN KOCK, D. V. S., Brooklyn, N. Y.

The patient, a fox terrier, was first seen Sept. 3, 1903. The tumor then was about the size of a pigeon's egg. Advised removal, but client (a young lady) could not be induced to have it done. So prescribed kali iodidi, crystal iodine, and adeps, the ointment to be applied several times daily.



The next time I saw patient was June 20, 1904. Tumor was as large as a goose's egg and suppurating. Ordered wound flushed with hot water, and injections of hydrogen peroxide; wound healing very readily.

The last time I saw patient was April 14, 1905. Animal was then 15 years old, emaciated, debilitated, totally blind from cataracts in both eyes, and tumor of enormous size, as seen in photos. Patient chloroformed.

Tumor weighed 1 pound 12½ ounces, and had small cysts all through it. Animal had never been bred, and the only injury received was a deep barbwire cut in the region of the mammary gland when two years old.

A DEVICE TO PREVENT DOGS INTERFERING WITH DRESSINGS.

By DRS. WHITE and PLASKETT, Nashville, Tenn.

We send you a photograph of fox-hound dog which suffered from fracture of the femur at the junction of its middle and up-

per thirds. The parts were immobilized by the application of a heavy plaster cast. A wooden collar was applied to prevent tearing of bandage, and dog made good recovery.

STERILIZED AIR TREATMENT FOR PARTURIENT PARESIS.

By E. C. THURSTON D. V. S., Sydney, N. S.

With reference to treatment of parturient paresis by inflating the udder with atmospheric air, the following may be of interest. On May 17 I was called to North Sydney Mines, a distance of 16 miles; before leaving I put the current number of

the REVIEW in my pocket to read on the trip across the harbor; becoming very much interested in the case reports of paresis therein cited, I made up my mind to follow the line of treatment at the first opportunity.

On my return I received a message by telephone to one of our largest dairies. The proprietor told me he had a valuable Guernsey cow which, to use his own expression, was "down and out with paralysis," at the same time saying he did not think anything could be done as he had lost two cows a short time previous under similar circumstances. However, I went out to see the patient, which I treated in a similar manner to the case reported by Dr. Dalrymple, using the bulb from my thermocautery with a teat syphon instead of a hypodermic canula.

The following morning the patient was up and feeding—apparently as well as ever. Needless to say the owner was most agreeably surprised, and considered the treatment little short of miraculous.

AMONG the distinguished foreigners who will honor the A. V. M. A. by presenting papers at the coming meeting are Drs. Robert Ostertag, of Germany; K. Tsuno, of Japan; and James Desmond, of Australia.

AMONG other valuable contributions to the 1905 meeting of the A. V. M. A. will be one of particular interest by Dr. Leonard Pearson on "The Vaccination of Cattle against Tuberculosis." Dr. Pearson and his staff have done sufficient work along this line to justify him in taking a definite position. In addition to this a particularly instructive exhibit will be made by Pearson and Gilliland of specimens showing the different lesions of tuberculosis in domestic animals, and, above all, of specimens showing the results of vaccination against this disease.

THE HORSE—"HERE'S TO HIM."—"Here's to that bundle of sentient nerves, with the heart of a woman, the eye of a gazelle, the courage of a gladiator, the docility of a slave, the proud carriage of a king, and the blind obedience of a soldier; the companion of the desert plain, that turns the moist furrows in the spring in order that all the world may have abundant harvest, that furnishes the sport of kings, that with blazing eye and distended nostril fearlessly leads our greatest generals through carnage and renown, whose blood forms one of the ingredients that go to make the ink in which all history is written, and who finally, in black trappings, pulls the humblest of us to the newly sodded threshold of eternity."

EXTRACTS FROM EXCHANGES.

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

NECROSIS OF THE CARTILAGE OF PROLONGATION OF THE SCAPULA IN A BOVINE [*Dr. Pietro Ghisleni*].—Described more as a sequelæ of diseases of the withers, specially in solipeds, necrosis does also present itself as localized and limited to itself as a consequence of direct traumatism. A four-year-old cow received a severe injury on the supero-anterior border of the right shoulder, which gave rise to a swelling warm and painful. This has existed for some twenty days and lately from the centre of the swelling a slight quantity of pus escapes. The introduction of a small probe into the opening from which the pus oozes out, reveals a fistulous tract, running towards the cervical angle of the cartilage, which is felt rough and grating. There is also a small subcutaneous tract running forward toward the superior third of the anterior border of the bone. As there is no difficulty in the function of locomotion, no other diagnosis can be made but abscess of the cervical angle of the scapula with necrosis of the corresponding part of the cartilage. The animal was secured, the fistulous tract freely opened, a large piece of necrosed cartilage was removed, all infiltrated tissue surrounding was cut away, curetting of all diseased tissues made and antiseptic dressing with drainage, etc., applied. In five and twenty days after the cow had entirely recovered. Conclusions of the author: Once more is demonstrated the advantage of the radical mode of treatment of similar injuries rather than to resort to the injection of irritating or cauterizing substances, which are so frequently followed by failures.—(*Clinca Veterinaria, January, 1905.*)

SUPRA-COTYLOID LUXATION, DISEASED HEAD OF THE RIGHT FEMUR, FRACTURE OF THE ILIUM AND OF THE COSTAL CARTILAGES OF THE CORRESPONDING SIDE IN A FILLY [*Dr. Pietro Ghisleni*].—A very interesting history of an animal which had injured herself by being cast in day time while at liberty in her stall and was left unobserved struggling for some time. When removed from her position she showed she was very lame, had bruises and wounds on the right hind-leg. She was left in her box, but as no improvement was observed the author

was consulted to say if recovery was possible, if the animal could ever do slow work, or if she could be used for breeding. As it was three months since the animal had been hurt, it was rather late to inquire. At any rate, a minute examination soon settled the question. The deformity, the lameness, the atrophy of the muscles, the presence of a large callous by rectal examination, the detection of slight motion within the rectum of the fragments of bone, etc., all were sufficient to give an unfavorable opinion, and the filly was killed. At the post-mortem the characteristic lesions of the injury of the coxo-femoral joint, the presence of the osseous deposits on the femur, on the ilium, around the cortyloid cavity, the callous on the ribs, all confirmed the diagnosis of lesions which had been made out, described and illustrated.—(*Clinica Veterinaria, Jan. and Feb., 1905.*)

EXTENSIVE LACERATED WOUND OF THE WHOLE RIGHT AXILLARY REGION, INVOLVING ALSO PART OF THE EXTENSOR MUSCLES OF THE FOREARM OF THE LEG OF THE SAME SIDE IN A COW, WITH RECOVERY [*Dr. Pietro Ghisleni*].—Frightened by her keeper, while she was turned out, a cow started running and attempted to jump over the door which had an iron lance. She failed in her attempt and caught on the iron lance, was finally gotten loose, bleeding profusely. Were her injuries curable? was the question the author had to settle. When the animal was seen the hæmorrhage had stopped, but her condition was serious. There was excessive subcutaneous emphysema, which made the animal look monstrous. The sternal region was the seat of a large wound, from which hung two large flaps of skin and muscle. The right anterior leg, held in flexion, was resting on the ground by the anterior face of the foot. There was a wound which from the posterior border of the shoulder extending forward into the axilla to join the point of the scapulo-humeral joint and which allowed the introduction of the two fists between the leg and the lateral wall of the chest. In fact, the hand and half of the forearm could be introduced into the axilla, the leg being almost entirely severed from the trunk. There was also a laceration of the extensors of the forearm, from the external to the internal side of the region. The hand within the axilla could feel another applied in this last wound, the extensor muscles being lacerated by an irregularly horizontal cut, right across their length and some four fingers about the cubitus. The prognosis was doubtful. The treatment consisted in removing all loose torn structures, suture of the edges of the wound after being cut smooth

and even, the application of drainage tubes to facilitate the injection of repeated washing with creolin solution at 3 per cent. The animal was kept in slings for a certain length of time and after 39 days of treatment was considered as cured, having only a long cicatricial mark as evidence of her severe injury.—(*Clinica Veterinaria, February, 1905.*)

A CASE OF PRIMARY TUBERCULOSIS OF THE MAMMÆ [*Dr. Giuseppe d'Alexandro*].—On October 25th the author was called to a farm where several cows were kept. One was shown to him. A handsome Dutch animal, aged eight years, with a splendid coat of hair, the skin supple and fine, the temperature 38.2°, and the functions, digestive and respiratory, normal. But the posterior quarters of the mammæ, the right one specially, are swollen. On palpation they feel hard, their sensibility is increased, and they give the sensation of being nodulous and bossilated. It is a month since this condition was noticed, and notwithstanding the milk has not changed in aspect, it looks quite normal, but the quantity has diminished. The supra-mammary lymphatic glands are swollen, hard and suspicious of tubercular nature. Yet the exploration of all the other glands is negative and nothing can be found in the submaxillary, the parotids, prescapular, axillary, prepectorals, or even retro-pharyngeal and sublumbar, as far as they can be examined; all seem to be perfectly normal. The bacteriological examination of the milk reveals the condition of affairs, and by the various methods used by the author the bacillus of Koch is revealed. The cow is evidently suffering with tuberculosis. She is slaughtered. At the most minute examination not the slightest alteration could be found except those of the mammæ. All the lymphatic glands were found normal, the lungs, the pleura, the pericardium, peritoneum, meninges, synovial membranes, genito-urinary apparatus, everything was normal. The right mammæ only was the seat of the lesions detected by external examination. The glandular lobes were greyish, of lardaceous aspect. Softening had taken place already in some. For a few tubercles the central caseous degeneration had taken place, in others calcification. The mammary tissue had lost its elasticity and presented on section a condition of softening, with more or less caseous degeneration in the centre. From all these conditions of the udder and the absence of lesions in any other organs the author considers that there is no possible doubt as to the correctness of his diagnosis.—(*Clinica Veterinaria, February, 1905*).

LACERATED WOUND OF THE ENTIRE LEFT AXILLARY REGION IN A MARE, WITH PARTIAL SEPARATION OF THE CORRESPONDING SHOULDER AND ARM FROM THE THORAX—RECOVERY [*Dr. Pietro Ghisleni*].—This mare, turned loose in a field, while trying to jump a ditch fell upon the point of a piece of wood and inflicted upon herself a large wound of the left axilla. Seen some fifteen minutes after the accident, the animal was found with a laceration which from a few centimetres of the point of the shoulder extended along the line of the axilla as far back as the posterior border of the scapula. Air was sucking into the cellular tissue at each movement of the animal and the leg was held in marked adduction. A veterinarian was called, who after disinfection and arrest of the hæmorrhage had attempted by sutures to keep the parts together, but with the irritability of the patient, its repeated motions, the stitches had given away, and, notwithstanding the greatest care, the case was not progressing. The author was called. He found the solution of continuity with lacerated borders and an abundant suppuration. The leg was carried freely in adduction at each motion. The animal was then cast and the parts thoroughly washed. It was then that it was observed that the axilla was so far injured that almost the whole leg was separated from the trunk. After a minute examination of the parts, taking in consideration the impossibility of bringing the edges of the parts together and that of keeping them together, the author prescribed the injection, within the cavity of the separated leg, of a liquid blistering preparation and a friction of the same mixture over the whole surface of the shoulder and of the arm of the left side, with the double object of giving rise to a uniform process of inflammation over the two surfaces of the injured region (inner face of the shoulder and inner face of the axilla) and again to develop in that region a cause of immobilization which would facilitate the cicatrization by suppuration. The animal was sold some weeks after and at a later date was reported doing well and with prospect of complete recovery.—(*Clinica Veterinaria, March, 1905*).

EPITHELIOMA OF THE PENIS IN A HORSE [*Dr. Pietro Ghisleni*].—This horse for two years has had an enlargement at the inferior face of the glans penis, which gradually has grown, become ulcerated, and finally interfered with urination which was frequently accompanied with hæmorrhage. Attempt has been made to remove the growth with a ligature without success. And now there is an enormous paraphymosis; a

very large cauliflower mass protruding from the sheath prevents the retraction of the penis. The organ above it is infiltrated, œdematous and hangs out of the sheath. When the animal is to micturate, he stretches with his hind-legs apart, the neck is extended and the back arched, and after a few minutes the urine escapes from several openings. The diagnosis of malignant tumor imposes an operation, which is performed May 24th. Amputation of the whole diseased mass with the ecraseur of Chassaignac. It weighed 147 grammes. The animal was returned to the owner the next day. Towards the end of July he was brought back to the writer for lameness and for diseased withers. An examination of the penis showed that there was a return of the old trouble with fistulous tracts, and escape of abundant suppuration of bad aspect. The owner gave the horse up and he was destroyed. At the post-mortem examination of the penis, the preputial sac was found with its walls like fibrous tissue and the end of the penis was representing a large cauliflower, with five openings communicating with an urethra more or less diseased. The microscopic examination of the tumor proved it to be cancer of the epithelial covering of the penis.—(*Clinica Veterinaria, March, 1905*).

FIBROMAS IN MULES AND HORSES [*Dr. Felice Cinotti*].—These are taken among many others observed by the author: *Case I.*—A mule, six years of age, has a growth on the superior lid of the right eye. Three months before it made its appearance, then very small, hard, and only recently it has begun to enlarge rapidly. To-day it prevents the eye from opening and the lid covers much of the globe. The external aspect is bosselated; the skin is rosy, the eyelashes are few. The mass is hard, with the skin intimately adherent. It is movable on the tarsal cartilage, which is not involved in the diseased process. The diagnosis of fibroma of the upper eyelid is made, and an operation is prescribed. The animal cast, secured and the parts thoroughly disinfected, an incision is made from the internal commissure of the eye, and running upwards and inwards so as to form with the median line an angle of 50 degrees. A second incision almost parallel to it is made, starting from the palpebral border on the other side of the tumor. A third is made parallel and close to the palpebral border, unites the lower extremity of the first two ones. And finally a fourth parallel to this passes immediately behind and close to the tumor, which is thus isolated. These manipulations allow the dissection of the growth, which is carefully made to save the tarsal cartilage. The flap of

skin surrounded by the first, second, and fourth incisions is dissected and brought to the border of the eyelid, to which it is sewed. An aseptic dressing was put on and in 10 days union by first intention was complete. *Case II* is that of a fibrous tumor which he removed from another mule and which was situated in the right inguinal region. Its extraction was performed with difficulty. *Case III*, similar to the preceding even in the location of the growth, but in a horse this time. The tumor was also in the right inguinal region. The growth of the eyelid weighed 26 grammes, that of the groin of the mule 205, that of the last case 320.—(*Il Nuovo Ercolani, March, 1905.*)

BELGIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

TUBERCULOSIS OF THE UPPER JAW IN A HEIFER—PSEUDO-PERICARDITIS [*Prof. Lienaux*].—Tuberculosis of the maxillary bones have not been described, and on that account this case offers a special interest. The case was that of a two-year-old heifer, which is in very poor condition. Her previous history is unknown. Her pulse is quick, the mucous membranes are pale, the jugular veins are largely filled and raised in the jugular groove, suggesting the suspicion of pericarditis with effusion. There is no veinous pulse, no swelling. The subglossal and guttural lymphatic glands are swollen and harder than usual. Temperature remains about 38.5°. The nose is wider; the mouth being open the anterior part of the palate seems swollen, regularly convex; the incisive pad is also deformed and enlarged. The mucous membrane that covers the bone is adherent to it, has lost its smooth aspect; it is red, ulcerated superficially and shows here and there yellowish granulations. The respiration is accelerated and loud; there is frequent cough and discharge from both nostrils of muco-purulent and rather abundant fluid. The visible portion of the floor of the nasal cavities shows that it is bulging also and has an ulceration on each side. Nothing abnormal is detected at the examination of the chest; lungs and heart seem normal. After eluding the possible diagnosis of actinomycosis and of actinobacillosis, the suspected diagnosis of tuberculosis is made certain by the examination of the tissue and discharge from the ulceration of the

mouth and by the use of tuberculin. At the post-mortem it was found that in the chest the anterior lobes of the heart and the parts corresponding to the heart are occupied with masses of tubercles. In sawing the head across the condition of the incisive bones is exposed. The substance of the bone contained a characteristic yellowish grey tissue.—(*Annales de Bruxelles, Jan., 1905*).

ZONA IN THE DOG [*Prof. Hibrant*].—In human medicine this name is used to designate the circular eczema or herpes zoster. Its definition can be given : an herpetic eruption on the tract of a sensitive nerve, in connection with a neuralgia of the same. This affection is clinically characterized by three manifestations : (1) fever and its symptoms, (2) pain, indicated by violent itching, (3) an eruption of vesico-pustules lasting some ten days and disappearing afterwards. Zona may appear on the course of all sensitive nerves, and, according to the diseased region, various names have been given, such as sciatic zona, crural, lumbo-abdominal, etc. The etiology is little known. Its cause may be a neuritis or a neuralgia of rhumatoid nature. It may be infectious. It is an analogous affection that the author believes he has seen in a dog. It presented circular plates of eczema on the left flank, and extending under the belly. This region was the seat of a violent itching sensation, as the dog would bite the diseased region and bark furiously. Repeated applications of a zinc preparation did not give much relief. To calm the local irritation, which was always very great, ointment of belladonna was resorted to. Baths and anthelmintic treatment were prescribed, but all in vain. A short time after, the dog was noticed biting the right flank as he had done the left : there was no lesion yet, and the itching feeling could only be attributed to a primary nervous trouble. Two days later an eruption of vesico-pustules was observed on the right flank, covering patches exactly similar to those of the left side : the itching had preceded their apparition. It is then that the author had the idea to assimilate the troubles to the lumbo-abdominal of man. The treatment consisted in local applications of salicylate of methyl, in an alcoholic solution, with slightly irritating frictions on the vertebral column. From that time the disease improved ; the lesions of the left side healed first, that of the right followed ; but it is hard to affirm that the treatment had a real curative effect.—(*Annales de Bruxelles, January, 1905*).

SURGICAL TREATMENT OF PARAPHYMOSIS IN THE HORSE.

[*Prof. Hendricks*].—A stallion had a paraphymosis of long standing, resulting from a blow the brutal driver had inflicted on the penis while it was in erection. Treated unsuccessfully in several ways, there remained a large tumor which prevented the penis from returning to its position; it remained hanging swollen and more or less ulcerated. The removal of the tumor was necessary, as amputation of the penis would ruin the value of the stallion. The following method was resorted to, so as to avoid the possibility of tearing of stitches, had the growth been simply dissected out and the skin sewed up. Using a curved needle, carrying an open notch at the eye, the Professor introduced it from backwards forwards through the base of the tumor. He then passed a strong thread through the eye of the needle and drew it through backwards, leaving the thread through the tract of the needle. Reintroducing the instrument a little distance off and again from backwards forwards, he took the end of the thread hanging, passed it through the notch of the instrument and drew it through the tract of the needle, and he thus continued until he had surrounded the base of the tumor with a series of loops, on its two sides, posterior and anterior. Then, through the loops of one side, the anterior one, he passed a flat rubber thread three millimetres thick; he cut each loop of the other side in the middle and one of the ends of the loop was tied up with the corresponding one of the preceding or following ones. By pulling on these ends and tying them tight, the elastic band was stretched also and the base of the tumor divided and surrounded by a number of points of sutures and as many elastic ligatures as were necessary to obtain a result. The following day the effects were manifested by the cold condition of the growth. In six days the slough was beginning. In nine, the tumor sloughed off, leaving a small wound that healed rapidly. The penis required some little time and massage before it resumed its normal size and its normal position.—(*Annales de Bruxelles, January, 1905.*)

FOUR CALVES FOR A COW—WONDERFUL CASE OF MULTIPARITY IN THE BOVINE SPECIES [*Prof. A. Reul*].—She is an ordinary cow, bred and raised in rather a poor country; she is small and has always been poor and thin. At her first gestation she had one calf. The following year she was covered by a bull of her breed and in due time delivered four calves, full of life, normally built and comparatively large, taking into consideration their number and the fact that the mother had but little room to carry them. Seven days after birth the little fellows weighed

17, 15, 16, and 18 kilogs. 500 grammes—a total of 66 kilogs., and half that the little mother had to carry, besides the weight of the fœtal envelopes, etc. Five months later they had so well grown and developed that their weight had raised from 17 kilogs. to 70 for the first, from 15 to 82 for the second, from 16 to 86 for the third and from 18½ kilogs. to 87 for the fourth. Having not enough milk to be fed with they ate all they could take hold of. Since that wonderful event the mother has not been in heat.—(*Annales de Bruxelles, January, 1905*).

PRESIDENT DR. M. E. KNOWLES, of the A. V. M. A., wishes the REVIEW to ask the members who have or can obtain interesting pathological specimens to exhibit them, together with their brief histories, at the Cleveland meeting.

THE President of the Board of Agriculture of Great Britain has appointed a committee to inquire into the general question of epizoötic abortion and to consider remedial or preventive measures. Professor John McFadyean, Royal Veterinary College, London, is chairman and the Very Rev. Dr. John Gillespie is one of the other five members.

SO VERY SUCCESSFUL was the horse show held in Toronto toward the end of last month that the society holding it has determined to erect a mammoth structure and in future house its own exhibitions rather than have them in the Repository. It is also proposed to have the show next year last through the entire week.

VETERINARY SURGEON DESMOND, who holds several important positions in the Government service of South Australia, has lately spent a large part of his time at the Bacteriological Institute of Brisbane, Queensland, where he has been assisting in the work of the Institute in the investigation of dengue fever and bubonic plague.

AN EASTERN PARTY intending to attend the Cleveland meeting of the A. V. M. A., expect to take the No. 3 Limited train on the Lackawanna Railroad at 10 o'clock on Monday morning, August 14, reaching Buffalo at 7.55 P. M. Then they will board a steamer of the Cleveland and Buffalo Transit Company, leaving Buffalo at 9 P. M., reaching the convention city at 6.30 Tuesday morning, having passed a restful night aboard the boat, and ready for the business of the first day's session. The transportation charges by this route are as follows: New York to Buffalo, $8.50; Pullman car, $2 extra; steamer fare about $2.50.

EXTRACTS FROM MEDICAL LITERATURE.

By E. M. RANCK, V. M. D., Natchez, Miss.

TETANUS.—Stoney reports two cases of tetanus treated with antitetanic serum, which presented a marked contrast to each other. In both the incubation period was long, in the first case 17 days and in the second case probably 18 days. In both the temperature was normal on the first appearance of the symptoms, in the second case it remained normal throughout the course of the disease; but in the first case after a preliminary fall it rose rapidly through 10.2° F. in twenty hours. In both cases the treatment was the same—*i. e.*, injection of serum and the administration of large doses of bromide of sodium and chloral by the rectum. In the one case death occurred within sixty hours of the onset of the first symptoms, whereas the second patient recovered. In the first case the spasms were frequent and severe, while in the second only one was observed. The result was due to the degree of infection and was not materially influenced by the treatment.—(*London Lancet, April 24, 1905.*)

ADAPTATION AND TUBERCULOSIS.—Adami discusses (1) the adaptation of the organism to the tubercle bacillus and (2) the adaptation of the tubercle bacillus to the organism. What he says of the tubercle bacillus can be said of any other form of microörganism. The theory is this: When a microörganism invades the body and is not immediately destroyed, it produces certain toxines which produce local and general disturbances. The body reacts to the toxines and produces antitoxines and substances which are inimical to the further growth of the invading germs. The offending microörganisms in turn produce defensive substances. Disease of microbic origin reduces itself, therefore, to a struggle between the invaded organism and the invader. Under certain conditions the end result is an increased resistance on the part of the organism to a specific infection and an increased virulence on the part of the invading germ for a like organism.—(*American Medicine, April 27, 1905.*)

CONSUMPTION.—Hutchinson asserts that pulmonary tuberculosis is a general disease with localized lesions in the lungs. It is therefore irrational to devote our attention too exclusively to the pulmonary lesions. The author is inclined to accept the conclusions of Robin and Binet as correct, and to believe that the predisposition to tuberculosis is dependent upon and exag-

gerated tendency on the part of an individual organism to fit oxygen and form carbonic acid, that is, to consume itself. Treatment must therefore be directed so as to overcome this tendency. Rest and overfeeding are the best measures at our command.—(*Medical Record, April 29, 1905.*)

THE COMPARATIVE VIRULENCE OF HUMAN AND BOVINE TUBERCLE BACILLI.—The comparative behavior of human and bovine tubercle bacilli was lately made the subject of a number of experiments upon various large animals by three of the medical officers of the Bureau of Animal Industry, the late Dr. E. A. de Schweinitz, Dr. Marion Dorset, and Dr. E. C. Schroeder. A report of the experiments has recently been issued by the Department of Agriculture in the form of a brochure of 100 pages, very handsomely illustrated, largely in colors. The authors regard some of Koch's experimental requirements as unnecessary and unreasonable, and it is their opinion that the intertransmissibility of human and bovine tuberculous disease is supported by so much indirect evidence of an overwhelming character that we are justified in looking upon it as practically established. —(*N. Y. Phil. Med. Jour.*)

DR. T. J. SULLIVAN, meat and milk inspector of the most populous county in Montana (Silver Bow), will present a paper at the Cleveland meeting of the A. V. M. A., on "The History of Meat and Milk Inspection in Montana," in which there will doubtless be interesting data.

TO CURE A BALKY HORSE.—A crowd blocked a Chicago street, and the horse doctor joined in to see what was up. "Ah, a balky horse," he murmured. Then he worked his way through the crowd, saying in an authoritative voice, "Let me pass, friends, I am a veterinary surgeon." Reaching the horse, he said to the master of the animal: "Put up your whip. It will do no good. I am a veterinarian. I'll cure your horse of the balks. Watch me." He took hold of the horse's front leg at the fetlock, bent it at the knee joint and held it in that position for three minutes. Then he put the leg down again and chirruped to the animal. It started off as though it had never balked in its life. "An old remedy for the balks, but an infallible one," said the doctor. "It has never failed me. Any balky horse, if you hold one of its fore legs up for three minutes, will be over its balkiness by the time the leg is lowered to the ground again."—(*Live-stock World.*)

ARMY VETERINARY DEPARTMENT.

IS THE USE OF MALLEIN AS A CURATIVE AGENT A CRIMINAL PROCEDURE?

The REVIEW of May contains a reprint from the *Western Veterinarian* which answers the above question in the affirmative. The anonymous writer starts out by expressing the hope that veterinarians will discontinue advocating the use of mallein and tuberculin as curative agents, because those engaged in sanitary science and police duty find it difficult to carry out their work in suppressing these diseases by destroying infected animals owned by people who have read about mallein treatment, etc., in agricultural papers. He concludes with this argument: "Even if it could be positively shown that these or other agents could cure cases of glanders or tuberculosis, the menace to human life maintained by the presence of such diseased animals makes the attempted treatment, other than for scientific purposes, a *criminal procedure.* We do not believe that mallein or tuberculin will cure cases of glanders or tuberculosis, but even if such were the case, our opinion would not change one iota from that recorded above."

For the sake of those among us who are swayed back and forth by opinions like this, I shall try to show wherein this anonymous writer errs. He himself may not be converted, because his "*belief*" about mallein is strong and deep and such may no more be shaken in medicine than in religion. But medicine has long since discarded belief and, fortunately, knowledge has taken its place. We do not know much about the curative properties of mallein and tuberculin, but enough to permit to formulate some facts. One known fact is that tuberculin has proven *not* to possess curative action, and accordingly it has long since been relegated to the more modest rôle as a diagnostic agent in man and animals. The other known fact, as elicited by Nocard in 1897, is that "repeated injections of mallein produce cessation of reaction in infected horses, and that such horses remain apparently healthy and fit for work." This discovery was against all expectation, because tuberculin and mallein, apparently so much alike from their mode of preparation, were until then supposed to act nearly alike, and it had previously been proven that repeated injections of tuberculin continue to produce reaction in infected cows.

This discovery of Nocard has been subjected to trial by a

number of investigators and practicing veterinarians, and in the main, has been confirmed. They have gone farther and have applied the repeated injections of mallein as a treatment of infected horses. The result indicates that mallein treatment produces a tendency to recovery, which can be accelerated by periodical doses increased progressively. A number of recoveries, apparently shown to be such by post-mortem examinations, have been recorded.* All investigators, however, agree on certain conditions of safety in the practical application of the mallein treatment. In the main they are as follows:

1. That the mallein used must be of good quality.
2. That the veterinarian applying it must have discernment.
3. That only *infected* horses should be subjected to the mallein treatment supported by judicious hygienic treatment.
4. That horses so treated must be periodically inspected.
5. That the value of the horses treated should warrant the expense of the treatment.

A great deal could be said in explanation of these conditions. To be brief: Point 1 requires that the veterinarian should have studied bacteriology and worked in a laboratory preparing mallein, or at least he should have studiously witnessed its preparation. As to point 2 it is simply "the man behind the gun," who will either hit or miss the happy medium in applying safely and effectively the mallein treatment. He should have discernment, *i. e.*, he should not be a mechanically manufactured veterinarian, but one born to understand "horse nature," as the physician, in certain diseases, must know human nature. If mallein treatment were only an automatic veterinary treatment such as the prescribing and selling of a cough mixture or colic mixture, we need not require deeper study or higher intelligence of the man applying it. But to place mallein in the hands of the half-educated veterinarian, who, parrot-like, has acquired a rudimentary and fragmentary knowledge of the ordinary branches of veterinary science; who does not understand the horse as an animal; who can neither follow nor formulate a scientific idea; but who merely possesses the commercial instinct to practice successfully in a financial sense; to such a veterinarian we should not intrust the mallein treatment. But

* (See AMERICAN VETERINARY REVIEW, May, 1904, Editorial: The curability of glanders with mallein, A. L., Paris; Aug., 1904, Editorial: Babés' conclusions upon malleination, A. L., Paris; *Berlin Thierarztliche Wochenschrift*, Nos. 10 and 15, 1904; *Vet. Journal*, London, Jan., 1905.

the well-educated, sober, earnest, studiously inclined and plodding veterinarian, even if he cannot earn three square meals a day in ordinary practice, can safely carry out this treatment, because he will find pleasure and satisfaction in it regardless of time and money. Unfortunately (in my opinion) such men are rare anywhere, and particularly in this country, where the commercial instinct predominates.

As to points 3–5, it is high time that it be understood that horses with visible lesions of glanders or farcy, *i. e.*, with typical, discharging glanders ulcers in the nostrils, or with opened-up discharging farcy buds, should be promptly destroyed, because they are spreaders of the disease, even if quarantined in the ordinary manner possible in cities or on the farm. But the horse proven only *infected* by a mallein test, whether the reaction is light, typical or severe, as long as he does not show any outward signs of the disease, may safely be subjected to the mallein treatment. Of course, discernment should rule here as to circumstances surrounding the patient, whether the value of the animal warrants the high expense of the repeated injections and periodical inspections, and whether proper hygienic treatment can be applied and relied upon or not. This latter is seldom procurable in the poor, run-down brute of the peddler, but it is nearly always possible in the valuable, well-kept horse, that may otherwise be sent to the bone yard for a trifling rise in temperature.

Discernment should also reign in the interpretation of the reaction to mallein as to kind and degree. Mallein does not nearly act as *uniformly* on the horse as does tuberculin on the cow, and even in that stolid animal we observe peculiar vacillations. Beware of the mechanical reading of the temperature-charts in the horse. The degree of morbid affection may have something to do with these vacillations, but the character and temperament of the horse certainly has. Heavy-weight horses react differently from light-weight, nervous horses different from lazy, well-bred, high-strung horses different from the cold-blooded, quiet animal with the thick skin that can hardly be pierced by the needle. Even personal acquaintance with the horse, or the gentle or brutal manner of handling the thermometer, all have more or less influence on the internal temperature of sensitive horses and are recorded as finely as in the most delicate barometer. Inability to perceive these facts have led veterinarians the world over to error, and have helped to doubt the reliability of mallein.

But while all this is so, and while cautious reserve should be observed in condemning horses merely on temperature-records, there is on the other hand no doubt that good mallein, intelligently applied, will tell the truth nearly as straight as tuberculin. For more than five years following the discovery of mallein, the leading veterinary journals of Europe and America were teeming with reports of mallein records with post-mortem results, and the conclusion has been that it is generally reliable as a diagnostic agent, that is: infected horses react and uninfected horses do not react. There were failures both ways, but they should now largely be ascribed to the "veterinarian behind the syringe." Failures in tuberculin tests have been counted as one-half per cent. as proven by an immense amount of statistics, and failures in mallein-tests as between one-half per cent. from much less statistics, because glanders is rare in comparison to tuberculosis. If these are the facts as brought out by years of labor of renowned investigators and intelligent veterinarians of all civilized countries, how can one of my esteemed army colleagues assert in the pages of this journal of last month that "slight cases of reaction are not proven to be glanders infection, since we often find animals which show some of the signs of the reaction, such as a rise in temperature and slight swelling at seat of injection, which never develop any further symptoms after the first reaction, but continue at work and keep in a good healthy condition." Surely, this is an unconscious twisting of facts and logic. Granted that good mallein had been properly applied—which I do not doubt, as I know this veterinarian—it would have been more reasonable to conclude that these cases of "apparent reaction" were cases of true reaction in 98-99 per cent. (statistics), and that the mallein injection had helped on a tendency to recovery, which showed itself by apparent health and fitness for continued work. (Nocard.) The possibility of a spontaneous recovery must be eliminated from this equation as a false quantity, because mallein had been applied.

As regards new points in mallein treatment, I can add nothing to what I have reported in this journal in May, June, July and August, 1904, but I hope new facts will be brought out by some of our colleagues. I have had no renewed experiences, because we have completely eradicated the glander-infection at this Post by that method. Of the eight horses quarantined in 1902, four have since been sold at auction for unsoundness of limb, while the four others still remain here in service. The

horse that reacted most severely, a grey of B Troop, 3d Cavalry, has been used in the annual practice marches of 1903 and 1904, which entail hard manœuvering of troops, and he has not shown the least sign of illness. No one could detect to-day the slightest sign that this horse had once been infected with glanders. That he was infected of this I am sure, even if I would not have had the proof of the mallein test, because I had been early trained to diagnosticate such cases by careful physical examination long before mallein was known. I hope that nobody will think that I am trying to figure as an authority on the mallein treatment, and my object to-day simply is to refute some wrong opinions and set aright some matters that have been mixed up by the confusionists among us.

It is very difficult for me to perceive at the present time of any scientific arguments or facts against the mallein treatment, still I do not advocate its general adoption and have expressly stated so in my article in 1904. This was not written for the half-educated veterinarian, but for the able men which fortunately we have among us also. In the hands of these the mallein treatment can never be "a *criminal procedure*," but will work as a blessing bestowed upon our profession and the civilized world by our immortal French colleague.

OLOF SCHWARZKOPF.

"THE REVIEW comes as a welcome visitor to me. To the veterinarian who is beginning a practice and needs help and light, as such an one does, it comes as a message of hope and cheer."—(*B. R. Wilbur, Randolph, N. Y.*)

DR. SEPTIMUS SISSON, Professor of Comparative Anatomy in the Ohio State University, College of Veterinary Medicine, has been granted a year's leave of absence. He sailed June 14th for Bremen and contemplates spending most of the time in study and observation of anatomy and anatomical methods in a number of the leading universities and veterinary schools.

ON June 10th, Waterville, Me., had for the first time a horse show, which proved to be a great success, and was organized by Dr. A. Joly. There were four classes—class 1, composed of double hitches; class 2, of single hitches, driven by ladies; class 3, single hitches, driven by gentlemen, and class 4, composed of ponies. Two silver cups were given as sweepstakes. Dr. W. S. Lord, of Portland, Dr. I. L. Salley, of Skowhegan, and L. H. Soper, of Waterville, acted as judges.

BIBLIOGRAPHY.

VETERINARY SURGERY. By Louis A. Merillat, V. S., Professor of Veterinary Surgery in the Chicago Veterinary College, etc. Volume I.—Animal Dentistry and Diseases of the Mouth. Illustrated. Chicago: Alexander Eger, Publisher, 1905.

In a small volume of 250 pages one of the foremost veterinary surgeons in this country has in the intervals of active practice given to his colleagues the benefit of his close study and large experience in the treatment of the organs concerned in the mastication of the food as well as being the host of the driving bit in solipeds, and the many diseases occurring to them as a result of natural causes and accidental injuries. Prof. Merillat has not in the comparatively few pages devoted to this volume sought to cover the subject as fully as it is possible to do, but he has rationally excluded all obscure, rare, and imaginary conditions and included only those conditions encountered in the routine of practice, thus placing those who will most frequently consult his work under many obligations. Animal dentistry has proven to the author a very fascinating portion of his practice, and he has bestowed upon that branch of surgery a great deal of intelligent study and practice, a result of which is embraced in the following summary of his conception of the scope of the subject: (1) The cutting and floating of the enamel points of the horse and ox; (2) the removal of projections which prevent perfect apposition of the dental arcades of the horse, ox and hog; (3) the treatment of secondary nasal catarrh resulting from diseased teeth; (4) the extraction of all diseased teeth of all animals; (5) the removal of tumors related to the teeth, in all animals; (6) the treatment of stomatitis caused by the bit or by dental projections; (7) the amelioration of driving defects resulting from dental irregularities in the horse; (8) the treatment of faulty eruptions of the permanent or temporary dentures in the dog, the horse, the ox and the cat; (9) improving the appearanee of the incisors of the horse. Merillat has always been an advocate of the merits of this branch of surgery, and he well says: "When dentistry in animals is more generally recognized as an important if not essential feature of animal therapeutics, and when dental operations by reason of greater skill are made easier, the veterinarian will then treat the art of dentistry with the same dignity as the other branches of surgery."

After a comprehensive introduction he takes up the subject in a systematic manner and treats it in a plain, terse style, easily

followed, and well calculated to impress the reader in a practical way, so that he feels his own competency to undertake any of the operations described where the technic is given.

The illustrations are well executed and well chosen to assist in the comprehension of the subject, and Eger has given a finish to the mechanical part of the book which reflects credit upon the young publisher.

Two more volumes are in preparation to complete his "Veterinary Surgery": Vol. II, Diseases of the Digestive, Respiratory, and Urino-Generative Organs; Vol. III, General Surgery and Operative Technique. Representing as Dr. Merillat does the modern school of surgeons, we anticipate great pleasure from a perusal of the promised volumes. In the meantime, no veterinary surgeon in this country should fail to secure the excellent first volume upon "Animal Dentistry."

A RAT KILLED A HORSE.—*Marysville, O., June 17.*—As the result of swallowing a live rat while eating oats out of his trough, the noted trotting horse, Corintho, son of Orntorio, 2:13, died in Plain City. The windpipe of the horse was lacerated by the rat.—(*Reprinted from the Daily Press without comment.*)

THE LATE DR. R. S. HUIDEKOPER'S WIDOW TO MARRY GEN. NELSON A. MILES.—*Philadelphia, June 23.*—Cupid has conquered General Nelson A. Miles, hero of 100 battles and half a dozen Indian wars, according to society gossip here. The General will capitulate in the Fall, it is said, to Mrs. Rush Shippen Huidekoper, the little god's representative. Mrs. Huidekoper has gone abroad, it is authoritatively stated, to purchase her trousseau. Aiding in this task is Mrs. Henry Huidekoper, her sister-in-law. Since last Summer General Miles has been quietly making frequent trips to this city, and his presence has been known only to a few intimate friends of Mrs. Huidekoper. They seldom were seen in public places together, owing to General Miles's prominence and the fear of his being recognized by one of his many friends here. Mrs. Huidekoper, who is forty-two years old and very attractive, has been a widow for a little more than three years. Mrs. Huidekoper lives at No. 2301 De Lancey Street, and her house is closed during her trip abroad. Mrs. Henry Huidekoper lives at No. 1704 Pine Street. They will be gone until the latter part of August or September 1. Upon their return, it is said, preparations will be begun for the wedding.—(*Special Despatch to the New York Evening Journal.*)

CORRESPONDENCE.

"THE TICK THEORY HANDLED BY AN ACARIOLOGIST."

BATON ROUGE, LA., June 13, 1905.

Editors American Veterinary Review:

DEAR SIRS:—Readers of the REVIEW, on this side of the Western Ocean, are, I feel sure, very grateful to the Senior Editor for his most interesting "European Chronicles," which appear with monthly regularity in our valuable home journal, as they give us, in succinct and most readable form, the gist of what is going on, professionally, in the great veterinary field of Continental Europe.

I must say, for one, that I was not a little surprised at the stand taken by that eminent authority, Pierre Megnin, against the tick theory of transmission of disease, as quoted by Dr. Liautard in his "Chronicles," which appeared in the June issue of the REVIEW. It seems almost sacrilege to question the opinion of such a scientist, and yet one is forced to the impression that he cannot possibly have made any very careful investigation into the life history and habits of, at least, one species of tick, the *Boöphilus annulatus*, otherwise he could not have made the statement accredited to him in the "Chronicles" referred to.

True, Dr. Liautard "leaves his friends of the Bureau to answer Mr. Megnin," which doubtless they will, and it may savor of presumption on my part to make the attempt to do so, and yet I have no doubt the Doctor will pardon a few remarks from one living below the Federal Texas Fever Quarantine Line, and who has been the victim, more than once, of "tick infestation," to his considerable bodily discomfort.

Under the caption which I have borrowed to head this article, Megnin is quoted as having said, that, "These insects (ticks) are great blood-suckers, it is true, but having no wings, and being entirely unable to move from one animal to another, as flies, or even some fleas do, how can they transmit a disease, although their belly is full of its germs, when they cannot pass from one animal to another animal?" It is this question, embodied in the latter half of the above quotation, which makes me venture the expression, that Megnin cannot possibly be perfectly familiar with the life cycle of our North American Texas fever tick, and that he must have based his statement on the habits of other species, which are by no means similar. Then,

again, he is evidently not aware that, in the case of "piroplasmosis," or our Southern cattle fever, the infective organism (*Piroplasma bigeminum*) passes from the infected mother tick, through the ovum, to the seed-tick (larva), and is, through this latter form, conveyed to the susceptible bovine animal.

Megnin is further quoted as saying, in his conclusions, that "The larvæ which come out of the eggs require months to complete their organization, and when they become hungry they go on small mammalia with thin skins that they can pierce, and never on large animals as their mothers do."

Those who have made a study of the tick theory of transmission of Texas fever in the Southern States of North America are quite familiar with the fact that the protozoan of this disease is not transmitted by adult ticks passing from one animal to another, but by seed-ticks (larvæ), the progeny of the engorged female parasite after the latter has dropped from off its infected bovine host, the eggs deposited upon the ground have hatched, and the larvæ have attached themselves to a passing animal coming in contact with them.

A few further remarks on the life history of the *Boöphilus annulatus* here may be of interest, and may, to some extent, clear away some of the difficulties under which Megnin may have been laboring. I quote from the results of Professor H. A. Morgan, entomologist of the Louisiana Agricultural Experiment Station, and published as Bulletin No. 51 of that Station in 1898. I may incidentally mention that Professor Morgan has done as much individual work with ticks, in their economic relation to the Texas fever problem, as any investigator in this country, if not more. He says: "In the seed-tick condition, this parasite is gregarious, collecting or bunching in great numbers upon grass, weeds, or, in fact, any elevated object near the place of hatching. The passing animal (bovine) coming in contact with a bunch of these minute ticks becomes thoroughly infested, the young ticks soon becoming fixed by their mouth-parts to the skin of the host. In from twelve to fifteen days, the young hexapodous form molts, after which it possesses four pairs of legs instead of six. Another shedding of the skin takes place in from four to six days, after the first, up to which time no sexual characteristics are apparent, except that the extreme size of the adult female now seems to be foreshadowed. After the second molt, the large size, and the dorsal shield of the female; the ventral bands and the pointed shoulders of the male, become characters easily distinguishable. At this period mating

takes place, and in a few days the 'round of life' is complete; the females, filled with blood, drop to the ground, lay their eggs, and another generation begins. From the time the seed-ticks (the hexapodous forms) attach themselves to the animal, until maturity is reached, there is very little disposition on their part to change their point of location. None, in fact, except at the very beginning of their parasitic life, or perhaps, immediately after each molt, or, in the case of males, to some extent, during their adult existence. Practically, it means death to the cattle tick if removed from its host when once it has been well located."

During the summer of 1898, while engaged with the conduct of experiments looking to the immunization of susceptible cattle to Texas fever, a series of tests were made with several varieties of ticks with the view of ascertaining whether those, other than the *Boöphilus annulatus* were capable of transmitting the *Piroplasma bigeminum*. Experiments with the "lone star tick" (*Amblyomma unipunctata*) were begun on susceptible cattle on July 2, 1898. Mature ticks were collected from three sources, viz:—from deer, from a dog, and from native cattle. Applications of seed-ticks, the progeny of those collected from deer, were made in great numbers on July 2d. The product of those collected from a dog were placed in large numbers upon a susceptible animal on July 9th, and again on August 17th of the same year; while seed-ticks, the young of those collected from native cattle, were applied to a susceptible animal on July 16th, July 25th, and again on August 9th. No signs of fever appeared during all of the experiments, the animals remaining in perfect health until the test of their susceptibility was made by infesting them with cattle tick larvæ (*Boöphilus annulatus*) on the 23d of September, after which they suffered from a vigorous attack of Texas fever.

The conclusion that the lone star tick does not convey the fever organism was further borne out, when, during March, 1899, this species was collected in the third stage (just after molting the second time) from native immune cattle, and permitted to develop on susceptible animals.

On July 19th, 1898, mature females of the wood, or dog tick (*Dermacentor americanus*) were collected from a dog. Eggs were deposited, and on August 29th, thousands of seed-ticks were placed upon an animal susceptible to Texas fever. Another liberal application was made on September 5th. The animal remained in good condition, showing no signs of fever

until it had placed upon it a liberal number of the larvæ of *Boöphilus annulatus.*

It is worthy of remark here, that all of the seed-ticks (larvæ) used in these experiments were artificially hatched in the breeding cages of the entomological laboratory from the mature female ticks collected, which goes to prove that, in the case of the "cattle tick," the *Piroplasma bigeminum*, or Texas fever protozoan, must have passed from the infected mother tick, through the ovum, to the seed-tick.

From the results of these investigations, then, it may be inferred (1) that the *Boöphilus annulatus*, at least, does not require wings, or be able to move from one animal to another, in order to transmit the organism of Texas fever, but that it, in the hexapodous form, becomes attached to the bovine host animal; remains, in the case of the female, until engorged with blood; drops to the ground after having molted twice; oviposits; the larvæ are then hatched; attain (in clusters or bunches) some elevated position, such as stalks of grass or weeds, etc., and ultimately attach themselves to the first passing host that comes in contact with them, to again commence their life cycle; and (2) that the infective agent must be conveyed to the seed-tick, through the ovum, from the infected mother tick.

I can only repeat, that this eminent acariologist must have had in mind the life history and habits of other varieties of ticks than the *Boöphilus annulatus*, the North American Texas fever-conveying parasite. And that if Mr. Megnin could have had the good fortune to carry on investigations in Louisiana, or other of the Southern tick-areas in this country, he would soon have become convinced that, not only is the *Piroplasma bigeminum* of Texas fever transmitted from immune to susceptible cattle, through the medium of our cattle-tick, but that the organism is conveyed from the infected female tick, through the egg, to the larva, all of which has been abundantly proven by quite a number of careful research workers, on this side of the Atlantic, whose records are beyond question.

W. H. DALRYMPLE, M. R. C. V. S.
Louisiana State University.

NASO-ŒSOPHAGEAL INTUBATION—PERFECTED APPARATUS VS. SUBSTITUTION.

ST. LOUIS, MO., May 22, 1905.

Editors American Veterinary Review:

DEAR SIRS:—It has been two years and four months since

I demonstrated the operation of syphoning the stomach of the horse before classes in two veterinary colleges. Though I had considered it a necessary and successful operation for more than eight years, as it had proven so in my private practice, it was even considered by many as a doubtful expediency in any case.

The effect on the classes was varied, grading from the men who said, "Phillips, get me one like yours at any price," to the men who looked, measured and squeezed between their fingers to get the characteristics of my instrument that they might order one and get it cheaper than I could buy them; to the men who thought any old tube will do as well; to the men who believed that nothing would do in a real case of stomach trouble—that it was an experimental operation.

It was evident to me that the operation was now launched, and the above experience with professional men looking for something cheap with which to perform this operation actually startled me, that I would eventually be put in a bad light for ever presenting this operation as being so practical. To save my reputation I at this time decided to standardize the operation by introducing a tube that might be termed a standard tube, one that an experience of eight years had proven to me to be the most practical.

It has been one year since I wrote a short article in your most valuable journal, stating facts of the possibilities of the operation, describing the procedure, and calling attention to the characteristics of a tube that would prove most practical. In the same issue I placed before the profession an advertisement calling attention to the Phillips "Perfected" Tube.

Since that time hundreds of veterinary surgeons over the United States and Canada are practicing the operation successfully. Many letters attest the merits of the Phillips "Perfected" Tube.

The general success and adoption of this method of treatment in acute stomach disorders is due to, first, drawing the attention of the profession to the rationality of the treatment; second, to the practical method of passing the tube; third, to the thorough syphoning of the stomach after the tube is in position, by liquefying the contents with a saline solution, thereby removing all irritative and fermentive matter; fourth, to presenting a practical tube whereby this work is possible.

The buyer of every tube sent out was urged to report any failure in passing the tube, that I might aid him by personal suggestions to make it practical to him. Not 2 per cent. of the

hundreds who have received the tubes have reported failure to pass the tube, and not 5 per cent. have reported no benefit in their first attempts. All were urged to not become discouraged in their first attempts to pass the tube. Is it not quite phenomenal for both the operation and instrument when we consider that the operation is learned from written instructions only, by surgeons of all grades and dispositions as diagnosticians and operators?

It was two years before I could have manufactured for me a glass-moulded tube of proper measurements and consistency, and I have upwards of two dozen samples and rejected tubes of fine finish and appearance that I could sell at a very low price. I would not recommend or sell them for stomach tubes, however, though they are made for that purpose, according to the minute description that my present glass-moulded tubes, the Phillips "Acme," are made.

Since I introduced the operation and have shown it to be so practical, individuals and firms have rushed in to supply the trade, some adopting deceptive methods to obtain it. The enclosed circular will explain. They are advertising a *Phil'ips Nasal Tube.* They know that the profession generally are not familiar enough with the spelling of *Phillips* to know whether one or two *L's* are in it, or whether the phrase *Philips Nasal Tube* is not the same as *Phillips "Perfected" Stomach Tube*, which was introduced as an instrument to be passed through the nasal chamber.

No doubt some will buy of such dealers. I admit their privilege to do so, but I wish to take this opportunity to caution the profession against any dealer who claims to sell or have for sale a Phillips Tube at a price that is less than that quoted in your journal, for they are not my goods. I shall inspect and have stamped every tube that is worthy my name.

Yours respectfully, J. M. PHILLIPS.

AS TO SPANISH VETERINARY LITERATURE.

121 SOUTH CORONA STREET, COLORADO SPRINGS, June 16, 1905.

Editors American Veterinary Review:

DEAR SIRS:—Do you know of any veterinary journal, etc., published in the Spanish language. If so, please answer in the columns of the REVIEW. Yours truly,

WM. SCHUMACHER.

[Can any reader of the REVIEW give Dr. Schumacher the information he seeks?—EDITOR.]

COMMENCEMENT EXERCISES.

WASHINGTON STATE COLLEGE (VET. DEPT.)

The commencement exercises of the School of Veterinary Science, Washington State College, Pullman, Washington, took place June 22, at 10 o'clock in the College Auditorium. There were four graduates: Dudley Niles Clark, William Henry Cumming, Arthur J. Damman, and Daniel Wallace Harrington.

OBITUARY.

ROBERT WARD, F. R. C. V. S.

The following minute records the loss of a brilliant member of the veterinary profession in Maryland: "At a meeting of the Maryland State Veterinary Medical Society the death of our late fellow-member, Robert Ward, F. R. C. V. S., former State Veterinarian of Maryland, and the following minute ordered published: Divine Providence having separated from us our late member, Dr. Robert Ward, who by his intellectual attainments, had arrived at an honored position in the veterinary medical profession, and had by a most genial disposition endeared himself to a wide circle of friends, we record with sorrow his death and realize that his course of life in this State, resulted in the betterment of his chosen profession and all those who had the pleasure of his friendship."

AMONG the graduates of the Medical Department of the University of Pennsylvania at the spring examinations was John J. Repp, V. M. D., the efficient Secretary of the American Veterinary Medical Association, who, we understand, does not anticipate abandoning veterinary medicine, but has acquired his second degree in order to prepare himself for work in the higher conception of his chosen profession.

THE investigation into effects of the loco weed on cattle and horses by the Department of Agriculture and the Colorado State Experiment Station has thus far been without results. The post-mortem performed last week by Dr. Glover of the station and Dr. Lamb, State Veterinarian, and Dr. March, in charge of the Government experiment at Hugo, developed nothing peculiar.—(*Breeder's Gazette, June 28.*)

SOCIETY MEETINGS.

THE REVIEW presents its compliments to Secretaries of Veterinary Medical Associations throughout the United States and Canada, and begs to again remind them that this journal earnestly desires to publish the transactions of every meeting held within that large territory. It points with pride to this department in Volume XXVIII, which include *most* of them; but two or three have failed to avail themselves of our oft-repeated invitation to give the profession at large the benefit of their deliberations. We want a closed volume of the REVIEW to constitute a complete record of everything of interest and value in a veterinary sense occurring in all the Americas during that period.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

OFFICE OF THE SECRETARY,
DR. JOHN J. REPP., 5246 OSAGE AVENUE,
PHILADELPHIA, PA., June 27, 1905.

Editors American Veterinary Review:

DEAR SIRS:—Although it is necessary to report for the July REVIEW the progress of preparation for the Cleveland meeting at a time when the expectancy of the profession is high, it is, nevertheless, a time when all the details are in the most active stage of formation, hence it is impossible to give an adequate idea of what the meeting will really be.

The Local Committee of Arrangements has its plans well advanced, and, while it is not yet in a position to announce the items in reference to the entertainment and the clinic, something more than the ordinary can be vouchsafed. The possibilities for entertainment in Cleveland and vicinity are unlimited, and the committee may safely be trusted to select that which is best. As for the clinic, both the Committee on Programme and the Local Committee have pledged themselves to see that it shall be a model, far excelling any the Association has yet had, and making a feature which alone will repay the outlay for the trip. Eminent clinicians will conduct the demonstrations, and an amphitheatre will be provided, so that all may profit by what is said and done. The clinic will be no idle affair.

Chairman Shepard, of the Local Committee, writes that the

Hollenden House, which will be our headquarters, is the largest and finest in the city, and that the Association will have the best meeting-place it has ever had. The rates are $1.00 upward per day. There are plenty of other hotels, a list of which will be furnished later, where first-class accommodations can be had at suitable rates.

Negotiations are in progress with the various passenger associations for reduced rates, and, as we have always heretofore obtained a rate of one and one-third fare for the round trip, there is every reason to think that such a rate will again be granted.

The literary part of the programme to date, is as follows:

Prof. Robt. Ostertag, Berlin, Germany, "Meat and Milk Inspection under Federal and State Control."

Prof. K. Tsuno, Tokio, Japan (subject not given).

Dr. J. Desmond, Chief Inspector, Central Board of Health, Adelaide, So. Australia (subject not given).

Dr. M. H. Reynolds, St. Anthony Park, Minn., "Stable Ventilation."

Dr. R. P. Lyman and Dr. C. L. Colton, Hartford, Conn., "Callous Fibromas."

Dr. W. L. Williams, Ithaca, N, Y., "Spavin Group of Lamenesses."

Dr. C. W. Fisher, San Mateo, Cal., and Dr. D. H. Udall, Columbus, O. (subject not given).

Dr. R. C. Moore, Kansas City, Mo., "Neurectomies of the Pelvic Limb."

Dr. L. A. Merillat, Chicago, Ill., "Accidents and Sequelæ of Surgical Operations."

Dr. L. Frothingham, Boston, Mass., "Negri Bodies and the Diagnosis of Rabies."

Dr. R. H. Harrison, St. Paul, Minn., "Unusual Lesions of Tuberculosis found in Abattoir Inspection."

Dr. J. W. Adams, Philadelphia, Pa. (subject not given).

Dr. L. A. Klein, and Dr. Haven Metcalf, Clemson College. S. C., "A Contribution to the Study of Epizoötic Abortion."

Dr. W. A. Stuhr, Ames, Iowa (subject not given).

Dr. George B. Jones, Sidell, Ill., "Hydrothorax."

Dr. A. Youngberg, Lake Park, Minn., "Swamp Fever of the Horse."

Dr. E. V. Wilcox, Washington, D. C., "Some Poisonous Plants in Utah."

Dr. Chas. Schulin, Billings, Mont., "Pathology of Tuberculosis."

Dr. T. J. Sullivan, Butte, Mont., "The History of Meat and Milk Inspection in Montana."

Dr. Leonard Pearson and Dr. S. H. Gilliland, Philadelphia, "Immunization of Cattle against Tuberculosis."

Dr. E. L. Quitman, Chicago, Ill., "General Remarks on Veterinary Therapeuties."

Dr. Francis Abele, Quincy, Mass., "Neverslips."

Dr. Samuel H. Burnett and Dr. Jacob Traum, Ithaca, N. Y., "Clinical Examination of the Blood of the Dog."

The State Live Stock Sanitary Board of Pennsylvania will make an exhibit of a collection of specimens showing the lesions of tuberculosis in various domestic and laboratory animals. This collection has been selected with great care and will be a marked feature of the meeting. It is requested that others may send pathological specimens so that quite an extensive exhibit may be made. Specimens should be sent to the Hollenden House, in care of Dr. E. H. Shepard.

Further material for the programme will be welcomed and titles should be sent to the Chairman of the Programme Committee, Dr. S. Stewart, 1330 E. 15th St., Kansas City, Mo.

I would once more point out that according to the revision of the by-laws made at St. Louis, the applications for membership must be on file with the Secretary by July 16th in order to be acted upon at Cleveland. Some energetic work must be done in this direction within the next few days.

Members of the veterinary profession should be laying their plans so that they may be in Cleveland, August 15-18, 1905. All are cordially invited. Respectfully,

JOHN J. REPP, *Secretary.*

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

CONCLUSION OF THE DETAILED REPORT OF THE CLINICS HELD AT BROOKLYN, N. Y., SEPT. 13, 14, AND 15, 1904.

(The following case, No. 25 in the original list, was withdrawn after it was in type because of the report on Nov. 27th, 1904, that the symptoms had returned and was withheld from publication in the report appearing in the Dec., 1904, REVIEW, pending the final outcome of the case. It is with great regret that, after much waiting and patience, the disposal of the animal to

unknown parties prevents us from reporting the exact condition at present or during the recent past, having had no definite report of his condition since Dec., 1904. W. L. WILLIAMS.)

* * *

25. Involuntary Shaking of the Head. A registered bay trotting gelding "Harry," foaled 1896. He had developed considerable speed and was driving pleasantly until two years prior to presentation, when symptoms of involuntary shaking of the head gradually developed and increased in intensity until he had become valueless. Various opinions as to the nature of the malady had been offered by different veterinarians; some attributed it to irregularity of the teeth and filed them without avail; others ascribed it to brain lesions, etc., and various remedies were tried without cure or amelioration. Presented at the Association clinic by Dr. S. Atchison on Sept. 16, the animal appeared in good condition and normal in all respects when at rest. When hitched and driven at a trot he at once began to violently shake and jerk his head as though trying to dislodge an unbearably noxious insect from his nose or ears, throwing his head with a sudden jerk, to the right and left, and up and down in a manner wholly beyond control. He constantly tended to veer to one side and kept the driver keenly on the alert to prevent his running into the curbing. A diagnosis of involuntary shaking of the head, due to some peripheral irritation of the super-maxillary division of the trifacial nerve, of a character at present undetermined, was made by W. L. Williams, and an unsuccessful attempt made to verify the opinion by injecting cocaine upon the nerve trunk at the infra-orbital foramen. In view of the long continued worthlessness of the animal and without regard for the failure to relieve the symptoms by means of cocaine, W. advised trifacial neurotomy as described in his "Surgical and Obstetrical Operations" as the only known hope of curing or ameliorating his malady. The operation was performed the following day according to the above cited technic. One of the wounds healed aseptically, the other became slightly infected but healed quite promptly. After the operation he showed some shaking of the head while standing in the stall, a condition which had not previously existed and was justifiably attributed to the operation. Such is the common result of this operation when infection occurs. While an earnest effort to avoid infection was made, asepsis was made uncertain through an exhaustion of suitable chloroform for an-

æsthesia at a critical moment and the substitution through error of a drug of uncertain quality, after which the patient became much excited and struggled violently while yet recumbent, so that proper guarding of the wounds was not possible. But the shaking of the head in the stall was of short duration and of minor consequence while present, and fourteen days after the operation the horse was hitched for the first time and drove sound. Since that time he was regularly driven, was tried on the speedway and tested in every way without showing signs of involuntary shaking of the head and exhibited no untoward results from the operation until Nov. 26, when the symptoms returned after having been absent for 56 days from the date when he began driving sound. After the return of the unfavorable symptoms he was hitched occasionally, but without favorable change, and was kept in the stable almost constantly and all trial abandoned, and finally sold in the stable early in the spring of 1905, without the writer being able to determine his condition at date of sale, and we are unable to trace the case further.

Veterinarians who examined the case reported the existence of an enlargement (neurom) at the seat of operation.

Like in the neurom following section of other sensory nerve trunks, infection of the trifacial uniformly aggravates the symptoms for a time, but in previous infections observed by the author the symptoms abated and ceased in from one week to four or five months. In this case it was desired to remove the neurom, but the proprietor apparently desired to avoid all risk of publicity, and preferred to dispose of the animal.

The technic of the operation is crude and defective, it being found exceedingly difficult to avoid infection, and in such cases an aggravation of the symptoms for a variable time seems unavoidable; while, so far as the writer has seen, uninfected cases recover promptly and permanently.

In this case the relief of the animal for some 56 days indicates the correctness of diagnosis and the possibility of success, and suggests that a second operation for the removal of the nerve tumor would have offered a favorable prognosis.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The last regular stated meeting for the season was held at Donaldson's Hall, Broad and Filbert Streets, Tuesday evening,

June 13, 1905, and was called to order at 8.15 P. M. by Dr. A. T. Sellers.

The following members responded to roll-call: Drs. H. P. Eves, D. B. Fitzpatrick, W. Horace Hoskins, Joseph D. Houldsworth, Henry T. Jarrett, Basset Kirby, W. S. Kooker, J. T. Kean, G. R. Hartman, James T. McAnulty, C. J. Marshall, Adam W. Ormeston, Leonard Pearson, Edgar W. Powell, W. H. Ridge, W. L. Rhoads, A. T. Sellers, and Joseph W. Vansant.

Among the visitors were Drs. Richard H. Wisdom, S. J. J. Harger and Charles Dingley.

Minutes of the previous meeting were read and approved.

Treasurer's report showed a balance of $11.48 to be carried over till fall.

It was voted to place the name of Dr. W. S. Kooker on the honorary list of membership.

The question left over from the May meeting in reference to how long oats would continue to be found in the fæces after the same had ceased to be fed was answered by several. The average time was estimated to be from three to four days in horses, much longer for cattle.

Dr. Joseph W. Vansant read an interesting paper on the subject of "Colics in Horses."

Dr. Leonard Pearson gave an illustrated talk on the subject of "Conformation in Horses." He exhibited and described the unusual qualities of some draft horses that had been in continual service in Philadelphia for from eight to fourteen years, the average length of time for horses engaged in the same kind of work being about four years. The horses described might be used as an ideal when selecting horses for heavy work. He also showed pictures of some of the best show horses of the past few years. Taking one to illustrate a typical horse for saddle, gentleman's road horse, hunter, high stepping park horse, etc. This lecture was both interesting and instructive.

Meeting was adjourned at 10.30, and the members and visitors spent an enjoyable hour in visiting, smoking, eating, and drinking.

The meeting was adjourned to meet the second Tuesday evening in September at the same place.

C. J. MARSHALL, *Secretary.*

THE best investment for a veterinarian is a year's subscription to the REVIEW (100 per cent. per annum).

THE MARYLAND STATE VETERINARY MEDICAL SOCIETY

has awakened from a long sleep and after holding several successful monthly meetings has, we believe, fully aroused, as is evinced by successful meetings of good attendance, increased membership and general interest. The REVIEW may look forward to some reports later on when a steady gait is dropped into that will carry the Society along with the leaders.

WM. H. MARTENET, *Secretary.*

CHARLES FRAZIER, B. S., M. D. V., late of the State University of Washington, has been elected to the chair of anatomy in the McKillip Veterinary College, Chicago. Prof. J. R. Periam has been secured to fill the chair of hygiene and breeding, and M. E. Guerin, LL. B., to fill the chair of veterinary jurisprudence.

THE MAINE STATE BOARD OF VETERINARY EXAMINERS met at Augusta, May 20, and organized as follows: President —Dr. W. S. Lord, Portland; Secretary, Dr. A. Joly, Waterville; Treasurer—Dr. F. E. Freeman, of Rockland. This board will be in session July 10, at 11 A. M., at the State House, for the purpose of registering those who are entitled to register.

THE PRIZES AWARDED IN THE DEPARTMENT OF VETERINARY MEDICINE OF THE UNIVERSITY OF PENNSYLVANIA ARE: The J. B. Lippincott Prize of $100, awarded to the member of the graduating class, who, in the three years spent in the veterinary department of the university, attains the highest general average in examinations; to Ezra Strickland Deubler. A prize of an écraseur, offered by a friend of the department to the member of the second year class who passes the best examinations in veterinary anatomy; to Stephen Lockett.

INCUBATOR CHICKENS.—"There is nothing new under the sun." The Egyptians, we are told, from time immemorial, hatched eggs in ovens of a peculiar and comparatively simple construction. In 1777 Bonnemain supplied the Parisian markets with poultry hatched by an apparatus devised by himself, and in 1325 D'Arcet obtained chickens from artificial incubation. But artificial incubation has recently reached a stage of perfection which inclines us to regard the process as new, and it seems fraught with possibilities hitherto unthought of.—(*Scottish Farmer.*)

NEWS AND ITEMS.

DR. TIPQUEEN, Salineville, Ohio, has been elected Sheriff of Columbianna County, Ohio.

DR. W. B. PROTHERO, V. S., Johnstown, Pa., has been elected Coroner of Cambria County, Pa.

DR. LEONARD PEARSON has been appointed a member of the Pennsylvania State Board of Health.

THE NEW YORK STATE VETERINARY COLLEGE had a list of twenty-six graduates at the June examinations.

DR. ELISHA HANSHEW, of Brooklyn, N. Y., suffered a sad bereavement last month in the loss of his estimable wife.

JOSEPH PLASKETT, D. V. S., of Nashville, Tenn., was married June 14, to Miss Elizabeth White, of Castle Hill, Tenn.

THE COMMITTEE ON DISEASES OF THE A. V. M. A. has indicated that its report this year will cover a wide scope and be very complete in data.

SECRETARY JOHN J. REPP, of the A. V. M. A., has changed his address from 5249 Addison Street to 5246 Osage Avenue, Philadelphia, Pa.

DR. P. K. JONES, late inspector Bureau of Animal Industry, Chicago, Ill., has resumed private practice in Pittsburgh, Pa., and has been appointed assistant inspector of dairy cattle at Union Stock Yards.

DR. JAMES A. WAUGH, Pittsburgh, Pa., has lately been teaching veterinary science in West Virginia University, and will direct the work in the new college. He is preparing a paper on tenotomy for the Cleveland meeting of the A. V. M. A.

DR. WILLIAM H. DALRYMPLE, M. R. C. V. S. (Eng.), of the department of veterinary medicine in the Louisiana State University, has been elected to membership in the Royal Institute of Public Health, London.

DR. WM. HENRY KELLY, of Albany, N. Y., expects to visit Europe during the present summer, and will join Dr. Veranus A. Moore, whose departure the first of June was noted in the last REVIEW, and together they propose attending the International Veterinary Congress at Budapest.

A PATRIOTIC PLEA TO CANADIAN STOCKMEN.—In last week's issue reference was made to that serious disease of horses, known as maladie-du-coit (dourine or equine syphilis). This disease, as will be seen in an article in another column, is so insidious in its nature as to be in many cases indiscernible in

the early stages or by any usual methods of inspection. The fact that the disease in question is first found in Canada on the range (it being doubtful if the disease investigated in Ontario in the eighties was maladie-du-coit), will at once bring home to horsemen the great possibility of the disease being widespread; in fact, far more so than official reports can as yet show. To all appearances the Veterinary Branch has one of the biggest and nastiest problems to handle in the history of veterinary-police work, a work that cannot be successful unless the horse-breeders and farmers of the country lend their aid, especially in notifying the officers of the branch of all suspicious cases, and to speak plainly, horsemen will be well advised to consider as suspicious cases any or all stallions or mares showing the least departure from the normal and healthy appearance of the generative organs. This disease (maladie-du-coit) is one that has had heretofore comparatively little attention from the veterinary scientific world, especially the English-speaking section of it; but the serious outbreak of this malady on the Canadian ranges, brought in from the adjoining States, will result in careful study and investigation as to the cause and nature of the disease. This Western country, more particularly the part included as Alberta and Western Assiniboia, may be considered as unsurpassed anywhere in the world as a horse-breeding country, and it is much to be deplored that so serious a disease has obtained a foothold in the horse-breeding districts of the West, a disease, to use an easily understood simile, comparable in its disastrous effects to the horse-breeding industry to last year's rust on the wheat crop. Let every stallion owner take warning, and refuse absolutely the use of his horse to mares showing the slightest sign of departure from the natural healthy condition of the sexual organs, and let every farmer intending to breed mares inform himself as to the sexual health of the stallion. At the present time one cannot tell where the disease has got to. Many range-bred mares have been put on the market in Assiniboia and Manitoba, some of which may be diseased. The Veterinary Branch has a number of cases under observation, and doubtless some up-to-date information regarding the disease will be forthcoming by means of bulletins. We would direct attention to excerpts from an article on this disease, taken from the Journal of Comparative Therapeutics, which affords some recent information on this very serious disease. How the disease can be spread any horseman will at once understand, and how it was brought into Canada undetected is just as readily understood

once the insidious nature of the disease is remembered, and that mares may be imported apparently healthy, yet capable of imparting the disease to a stallion, which in turn spreads it throughout a district.—(*Farmer's Advocate, June 14.*)

VETERINARY EXAMINATIONS.—A veterinary surgeon, writing in an Old Country exchange, presents the following arguments in favor of a veterinary examination of a horse before it is purchased: "Most people who have anything to do with horses believe themselves to be good judges; anyhow, they take offsense at the bare suggestion from anyone else that they are not. Many of what I should call lesser judges scout the idea of asking a vet. to examine or advise them before making a purchase. Some of these would be surprised to learn that the very best judges and largest of dealers (both as to numbers of horses and prices paid) are in the habit of paying for a vet.'s examination. I think the explanation is to be found in the fact that all who know a horse from a mule cultivate an eye for conformation, and with opportunities of comparison daily, sooner or later conceive an ideal horse or standard of outward perfection as to shape and make and general behavior, and thereafter a horse is good, bad or indifferent in their opinion according as he more or less conforms to that ideal. This education of the eye is not the monopoly of the scientifically trained or of the cultured, many illiterate men possessing it in larger degree than those with greater opportunity of developing the sense of comparison, the possession of which "sense" is in itself usually considered a proof of high civilization. There are many degrees of comparison in the thoughts of the people of this country. Among the Zulus there are none. A man is "good man" or "bad man," they have no conception of a "middling man." Where buyers come to grief when acting on their own judgment of horseflesh is in their failure to detect infirmities or causes of unsoundness. I am inclined to give the average horseman credit for being as good a judge of general conformation and suitability for his purposes as the average vet., but the latter will often see some damning fault, from the other side of the road, which the horseman has not looked for or thought of until its effects have been brought home to him. The horseman sees the animal as a whole; the vet. sees him as an engineer views an engine, and with an eye to the portions of the machine known to most frequently develop faults or be subject to greatest friction or strain. He has the advantage of having taken horses to pieces in the dissecting room, as the engineer has done in the machine shop.

He knows how the respective parts ought to fit, and what may be expected if they do not. A knowledge of the structure of an animal and the purposes for which his various parts are designed is an essential preliminary to a correct judgment as to soundness. An ideally sound horse has been conceived, just as an ideally formed one has taken root in the mind of the horseman, and though a theoretically sound horse is rara avis in terris, yet the anatomist has handled perfect specimens and easily detects imperfections. Let me give an example of what happens for want of a knowledge of anatomy, and that not of a kind which must be learned in the dissecting room. A man came to me to-day to appoint a time for an examination as to soundness, as he said, "he had been took in over the last horse, and found after he bought him that he had had two holes punched in the inside of his nose." I asked him if they gave any trouble, and he replied in the negative. Asked him if he had looked in any other horse's nose to see if more of the same sort of holes could be found, and he replied with some dignity that he had not. "Well," I said, "if you can show me a horse that hasn't such holes I will buy him for you and make you a present of him." We adjourned to a stable where several horses could be examined, and found that on the floor of each nostril every horse had a hole which has very much the appearance of being "punched," as this man said, so clean-cut is it in a healthy animal. If the reader will look inside his horse's nostrils he will see a hole on the reflected skin near the margin. It is the orifice of the duct or channel which conducts the surplus moisture from the front of the eye, and is squeezed into the corner or top end of canal when the horse blinks. All animals are so provided. Men who refuse to cry at scenes of grief blow their noses in order to dispose of the tears which would otherwise run down their manly cheeks. To impress young readers may I tell another story? It shall be short. When thousands of horses were being sent to South Africa, and the supply of vets. ran out, some of the transports sailed without these officers. On one of them a zealous militia officer in command, who could not distinguish between the nasal discharge of influenza and that of glanders, and had been told (and rightly) that the presence of an ulcer on the membrane was diagnostic of glanders, made the astonishing discovery of my friend of this morning, and proceeded to pistol 180 horses before someone else discovered that other horses had the same 'ulcers' that had not shown any nasal discharge or other symptoms of disease."

CEREBRO-SPINAL MENINGITIS IN CATTLE [*By Paul Shekwana, Iowa City, Ia., Bacteriologist of the Iowa State Board of Health*].—The object of this article is to draw the attention of the medical profession as to the possible sources from which cerebro-spinal meningitis may spread. Until very recently it was believed by all that this disease occurred only in man. Lately, however, a few cases have been recorded by the Minnesota State Board of Health which show that it occurs in cattle also. On February 20, 1905, Dr. H. E. Talbot, of Des Moines, submitted the brains of two cattle to be examined at the laboratory of the Iowa State Board of Health in Iowa City. This gentleman stated that a number of cattle had been dying in the neighborhood of Colfax of an epidemic of a perplexing disease, which he thought to be some form of meningitis. He wanted to know if it was infectious or contagious. Professor H. Albert, the director of the laboratory, and the writer inoculated a rabbit under the dura mater with 1 c.c. of an emulsion made from the two brains. The animal died after thirty-six hours, showing before death and at the post mortem examination all the signs and symptoms of cerebro-spinal meningitis, retraction of the head, thrombosis of the blood vessels, softening of the brain, and exudate about the meninges, etc. The microscopical and cultural examinations also proved it to be the disease in question. The slide preparations from both the original brains and from the brain of the rabbit inoculated by us showed a great number of *diplococcus intracellularis meningitidis*, some within and some outside the cells. We know for certain that cerebro-spinal meningitis is an infectious disease, occurring generally in epidemics in man; but now we have reasons to believe that it occurs in cattle as well. Whether man infects cattle, or cattle infect man, it cannot be definitely said, but certain it is that the disease attacks both animals. From this fact it can be reasonably inferred that one mammal infects the other and *vice versa.* The question then arises: Is it not quite possible that cattle have been the source of infection in some of the epidemics occurring in man? In cerebro-spinal meningitis there is usually a discharge from the nose, and this discharge contains *diplococcus intracellularis meningitidis*, and thus becomes the principal source of infection. On account of this great danger, care should therefore be taken by all those who come in contact with cattle suffering from the disease. Cerebro-spinal meningitis, then, must be considered to be a malady which not only affects man, but cattle as well.—(*N. Y.-Phila. Med. Journal, April 1.*)

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table will be found the dates, places of meeting, and Secretaries' names and addresses of all the Veterinary Medical Associations of the United States and Canada. Secretaries are requested to see that their organizations are properly included in the list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	August 15-18.	Cleveland, O.	J. J. Repp, Phila., Pa.
Vet. Med. Ass'n of N. J.....	July 13 14,1905	Wash'gton Pk	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	1st Tues. Aug.	Bridgeport.	B. K. Dow, Willimantic.
New York S. V. M. Soc'y....	September,1905	Ithaca.	W. H. Kelly, Albany, N.Y.
Schuylkill Valley V. M. A....	.....	.....	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Vacation.	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	....	.....	A. E. Flowers, Dallas.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet Med. Ass'n.....	July 12, 1905.	Augusta.	C. L. Blakely, Augusta.
Central Canada V. Ass'n.....	.....	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n...	.....	.....	Judson Black, Richmond.
Alumni Ass'n N. Y.-A. V. C..	April, 1906.	141 W. 54th St	W. C. Miller, N Y. City.
Illinois State V. M. Ass'n.....	Feb. 15, 1906.	Decatur.	W. H. Welch, Lexington, Ill
Wisconsin Soc. Vet. Grad.....	Call of Pres't.	Racine.	S. Beattie, Madison.
Illinois V. M. and Surg. A....	Call of Com.	Champaign.	J. M. Reed, Mattoon.
Vet. Ass'n of Manitoba	July, 1905.	Not determ'ed	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n...	.....	.....	T. B. Carroll, Wilmington.
Ontario Vet. Ass'n.....	July, 1905.	London, Ont.	C. H. Sweetapple, Toronto.
V. M. Ass'n New York Co....	1st Wed. Oct.	141 W. 54th St	D. J. Mangan, N. Y. City.
Ohio State V. M. Ass'n.....	.....	Columbus.	W. H. Gribble, Wash'n C.H.
Western Penn. V. M. Ass'n...	1st Wed. ea. mo.	Pittsburgh.	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	August, 1905	Kansas City.	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n...	July, 1905.	Roch'ter, N.Y	J. H. Taylor, Henrietta, N.Y.
Iowa State V. M. Ass'n.....	January, 1906.	Ames.	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n..	July, 1905.	Minneapolis	J. G. Annand, Minneapolis.
Pennsylvania State V. M. A...	.....	....	C. J. Marshall, Phila.
Keystone V. M. Ass'n.....	2d Tues. Sept.	Philadelphia.	C. J. Marshall, 2004 Pine St., Phila
Colorado State V. M. Ass'n...	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	.....	.....	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n....	3d Thursday June and Dec.	Providence.	T.E. Robinson, Westerly, R.I
North Dakota V. M. Ass'n....	January, 1906.	Fargo.	E. J. Davidson, Grand Forks
California State V. M. Ass'n...	Mch. Je. Sep, Dc	San Francisco	P. H. Browning, San Jose.
Southern Auxiliary of California State V. M. Ass'n....	Jan. Apl. Jy, Oct.	Los Angeles.	H. D. Fenimore, Los Angeles
South Dakota V. M. A.....	....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	A. T. Peters, Lincoln.
Kansas State V. M. Ass'n....	.....	Topeka.	Hugh S. Maxwell, Salina.
Ass'n Médécale Veternaire Francaise "Laval,".....	1st & 3d Thur. of each month.	Lect. R'm Laval Un'y Mon.	J. P. A. Houde, Montreal.
Alumni Association A. V. Col..	April each yr.	New York.	F. R. Hanson, N. Y. City.
Province of Quebec V. M. A...	.....	Mon. & Que.	Gustave Boyer, Rigand, P.Q.
Kentucky V. M. Ass'n.....	.....	... .	D. A. Piatt, Lexington.
Wolverine State V. M. Ass'n..	.....	.....	W. W. Thorburn.
Washington State Col. V. M. A.	Vacation.	Pullman, Wa.	Wm. D. Mason, Pullman.
Ohio Valley V. M. Ass'n.....	.....	Evansville, I'd	J.W. Moses, Mt. Vernon, Ind.
Iowa-Nebraska V. M. Ass'n..	.....	.....	A. T. Peters, Lincoln, Neb.
Louisiana State V. M. Ass'n..	.....	.....	E. P. Flower, Baton Rouge.
Essex Co. (N. J) V. M. Ass'n	.....	.....	B. K. Baldwin, Newark.

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VETERINARY DENTAL OUTFIT.

HAVING been so flooded with inquiries in regard to the VETERINARY DENTAL OUTFIT, consisting of the "TWENTIETH CENTURY DENTAL FLOAT," and the "COMBINATION VETERINARY DENTAL and SURGICAL HALTER," patented by Dr. Ellis, of the REVIEW, and whose advertisement appears on page 6 (adv. dept.), many of which have remained unanswered for a considerable time from sheer inability to get at them, he wishes to apologize for the same, through this department, and to answer the principal question in each letter here; viz., the price.

The price of the "Outfit" is $75.00. Float separately, $65.00. Halter alone $10.00. In regard to the practicability of the float, the best proof that it is practical lies in the fact that the inventor has used it exclusively on all classes of horses for over four years with GREAT SATISFACTION TO HIS CLIENTS. As to durability, the one he is now using he has used for two years and five months, and it is in good condition still, despite the fact that he floats a large number of horses yearly, larger than before using the power float by a great number. The "Halter" is a gem, not only for dental work, but for any operation, about the head or face—as trephining, etc., and working about the eyes, ears, or nostrils.

Dr. Ellis will be pleased at any time to demonstrate the practical working of the float to any veterinarians who can find it convenient to get to him, if they will give a short notice of their intention to do so. Many veterinarians run into town for something, and want to see the float, and find, frequently, that the doctor is on an out-of-town call, or equally inaccessible, whereas with a little notice he could have arranged to see them. The prices will hereafter appear with the advertisement.

SUMMER COUGHS are frequently persistent in their character, and horse owners become impatient, as they think a cough out of place in the summer time anyway. Glyco-Heroin (Smith) is very gratifying in its results on this class of cases. Look it up on page 2 (adv. dept.)

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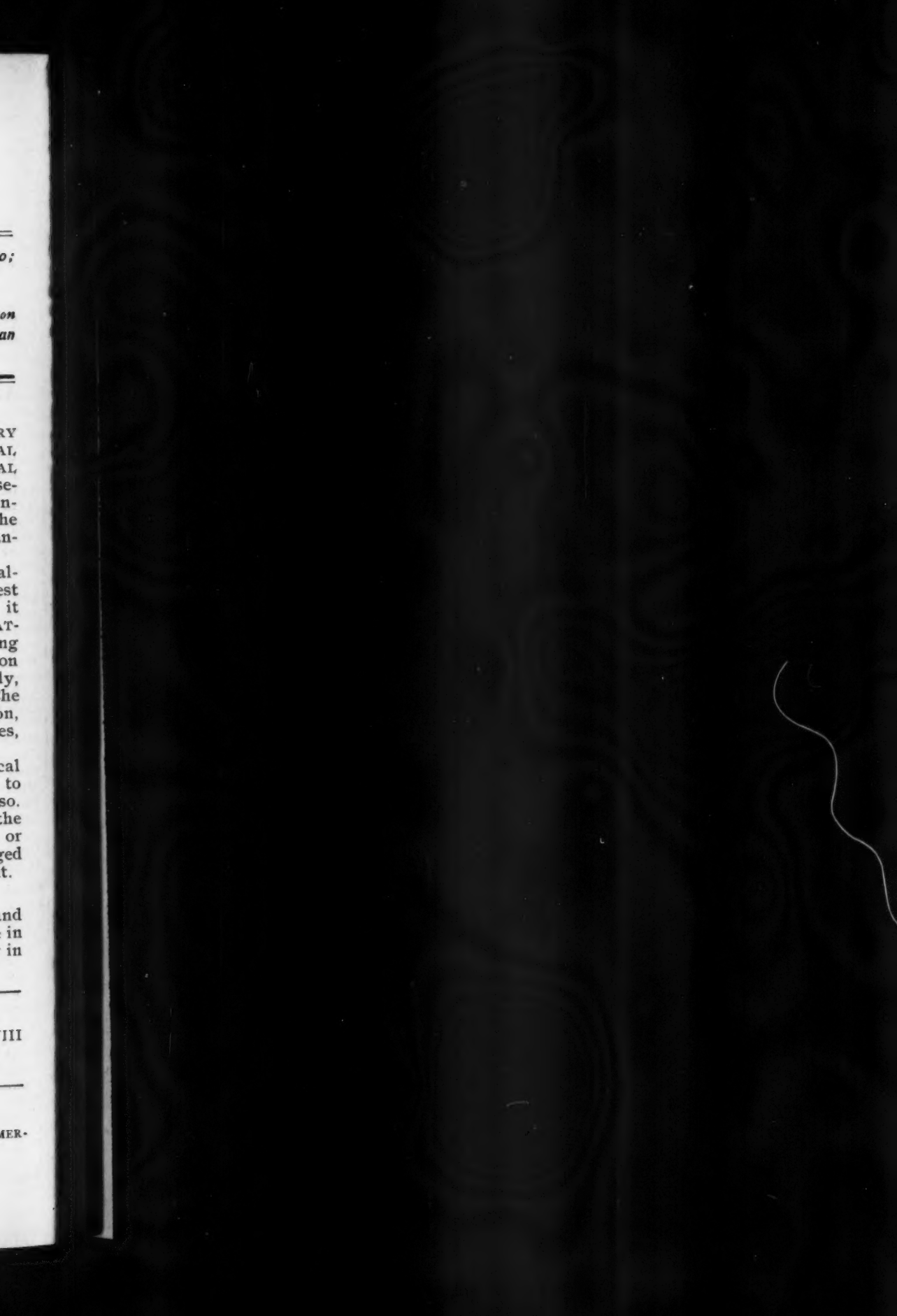
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